

***Appendix H***  
***Deterministic Water Quality Predictions Using***  
***Mass-Balance Models for Partridge River Watershed***

**Mine Site-Proposed Action**

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- H.2** Partridge River: Year 5
- H.3** Partridge River: Year 10
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- H.5** Partridge River: Year 20
- H.6** Partridge River: Closure
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**Mine Site-Reasonable Alternative**

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***Appendix H.1***  
***Partridge River***  
***Proposed Action***  
***Year 1***

## Partridge River Mass-Balance Model - Mine Site - Propsed Action

### FLOWS

Case	Year 1			
Flows	Low Flow Conditions (no surface runoff)			
Total flow in Partridge River	flow in river at SW-001	Q_r1_L =	1.18	(cfs)
	flow in river at SW-002	Q_r2_L =	1.54	(cfs)
	flow in river at SW-003	Q_r3_L =	1.65	(cfs)
	flow in river at SW-004	Q_r4_L =	2.07	(cfs)
	flow in river at SW-004A	Q_r4a_L =	3.51	(cfs)
	flow in river at SW-005	Q_r5_L =	5.78	(cfs)
	flow in river at USGS Gage	Q_r6_L =	6.25	(cfs)
	total flow into Colby Lake	Q_cl_L =	7.81	(cfs)
	flow check	Q_ck_L =	7.81	(cfs)
Input flow data	surface water flow into SW-001	Q_s1_L =	-	(cfs)
	surface water flow into SW-002	Q_s2_L =	-	(cfs)
	surface water flow into SW-003	Q_s3_L =	-	(cfs)
	surface water flow into SW-004	Q_s4_L =	-	(cfs)
	surface water flow into SW-004A	Q_s4a_L =	-	(cfs)
	surface water flow into SW-005	Q_s5_L =	-	(cfs)
	surface water flow into USGS Gage	Q_s6_L =	-	(cfs)
	surface water flow into Colby Lake	Q_scl_L =	-	(cfs)
	surface water inflow from Hoyt Lakes WWTP	Q_shl_L =	0.39	(cfs)
	surface water inflow from discharges upstream of PM-1	Q_sns_L =	1.00	(cfs)
	West Pit overflow	Q_sms_L =	-	(cfs)
	ground water flow into SW-001	Q_g1_L =	0.18	(cfs)
	ground water flow into SW-002	Q_g2_L =	0.36	(cfs)
	ground water flow into SW-003	Q_g3_L =	0.11	(cfs)
	ground water flow into SW-004	Q_g4_L =	0.32	(cfs)
	ground water flow into SW-004A	Q_g4a_L =	1.39	(cfs)
	ground water flow into SW-005	Q_g5_L =	2.27	(cfs)
	ground water flow into USGS Gage	Q_g6_L =	0.47	(cfs)
	ground water flow into Colby Lake	Q_gcl_L =	1.17	(cfs)
	ground water seepage from East Pit to SW-003	Q_gep_003_L =	-	(cfs)
	ground water seepage from East Pit to SW-004	Q_gep_004_L =	-	(cfs)
	ground water seepage from West Pit	Q_gwp_L =	-	(cfs)
	ground water liner leakage from Cat 1/2 stockpile	Q_gC12_L =	-	(cfs)
	ground water liner leakage from Cat 3 stockpile to SW-003	Q_gC3_003_L =	0.0000	(cfs)
	ground water liner leakage from Cat 3 stockpile to SW-004	Q_gC3_004_L =	-	(cfs)
	ground water liner leakage from Cat 3LO stockpile to SW-003	Q_gC3LO_003_L =	0.0000	(cfs)
	ground water liner leakage from Cat 3LO stockpile to SW-004	Q_gC3LO_004_L =	0.0000	(cfs)
	ground water liner leakage from Cat 4 stockpile	Q_gC4_L =	0.0000	(cfs)
	ground water liner leakage from LO SP	Q_gC4LO_L =	0.0000	(cfs)
	ground water seepage from Overburden Storage	Q_gOS_L =	0.0765	(cfs)
	ground water seepage from Overburden (Cat 1/2)	Q_gO12_L =	0.0199	(cfs)
	ground water liner leakage from Cat 1/2 sumps	Q_gC12s_L =	0.0000	(cfs)
	ground water liner leakage from Cat 3 sumps	Q_gC3s_L =	0.0000	(cfs)
	ground water liner leakage from Cat 3LO sumps	Q_gC3LOs_L =	0.0000	(cfs)
	ground water liner leakage from Cat 4 sumps	Q_gC4s_L =	0.0000	(cfs)
	ground water liner leakage from LO SP sumps	Q_gC4LOs_L =	0.0000	(cfs)
	ground water seepage from Overburden pond - PW1	Q_gOp1_L =	0.0189	(cfs)
	ground water seepage from Overburden pond - PW7	Q_gOp7_L =	0.0355	(cfs)
	ground water leakage from Haul Road pond - PW2	Q_gHRp2_L =	0.0000	(cfs)
	ground water leakage from Haul Road pond - PW4	Q_gHRp4_L =	0.0000	(cfs)
	ground water leakage from RTH pond - PW3	Q_gRTHp_L =	0.0000	(cfs)
	ground water liner leakage from WWTF pond	Q_gWTFp_L =	-	(cfs)

Partridge River Mass-Balance Model - Mine Site - Propsed Action

Case	Year 1		
Parameter	Silver		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0001 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0001 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0001 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0001 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0001 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0001 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0001 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0001 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shi =	0.0001 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0001 (mg/L)
	concentration of West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0006 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0006 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0006 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0006 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0006 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0006 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0006 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0006 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	0.0000 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	0.0007 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0007 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0007 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.0003 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	- (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	0.0000 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C gC3s =	0.0007 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.0007 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0007 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0003 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	- (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	- (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0006 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0006 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0006 (mg/L)
	concentration of liner leakage from WWTF pond	C gWTFp =	0.0027 (mg/L)
			Low Flow
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	- (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.00280 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.00340 (mg/s)
	mass flux of surface water into SW-002	M s2 =	- (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.00559 (mg/s)
	mass flux of surface water into SW-003	M s3 =	- (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.00168 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	- (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.00503 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	- (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	- (mg/s)
	mass flux of surface water into SW-004A	M s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.02166 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	- (mg/s)
	mass flux of surface water into SW-005	M s5 =	- (mg/s)
	mass flux of ground water into SW-005	M g5 =	0.03533 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.00732 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	0.01821 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shi =	0.00110 (mg/s)
			Low Flow
Mass balance at each node	mass flux in river at SW-001	M r1 =	0.0062 (mg/s)
	mass flux in river at SW-002	M r2 =	0.0118 (mg/s)
	mass flux in river at SW-003	M r3 =	0.0135 (mg/s)
	mass flux in river at SW-004	M r4 =	0.0185 (mg/s)
	mass flux in river at SW-004A	M r4A =	0.0402 (mg/s)
	mass flux in river at SW-005	M r5 =	0.0755 (mg/s)
	mass flux in river at USGS Gage	M r6 =	0.0828 (mg/s)
	mass flux into Colby Lake	M cl =	0.1021 (mg/s)
			Low Flow
Convert mass flux to concentration	concentration in river at SW-001	C r1 =	0.00019 (mg/L)
	concentration in river at SW-002	C r2 =	0.00027 (mg/L)
	concentration in river at SW-003	C r3 =	0.00029 (mg/L)
	concentration in river at SW-004	C r4 =	0.00032 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00040 (mg/L)
	concentration in river at SW-005	C r5 =	0.00046 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00047 (mg/L)
	concentration in Colby Lake	C cl =	0.00015 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Propsed Action

Case	Year 1		
Parameter	Aluminum		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0700 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0700 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0700 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0700 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0700 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0700 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0700 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0700 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0700 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0173 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.1250 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.1250 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.1250 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.1250 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.1250 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.1250 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.1250 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.1250 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0190 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	1.6800 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	1.6800 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	46.6857 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	4.0219 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.4106 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.1400 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0190 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	1.6800 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	1.6800 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	46.6857 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	4.0219 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.4106 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	0.4106 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.1250 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.1250 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.1250 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	2.5500 (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.63675 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.48959 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	1.27124 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.38160 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00013 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00007 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	1.14217 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00007 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00050 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00053 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.88859 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00002 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.21972 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00006 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00010 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	- (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	4.92269 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.07887 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	0.41280 (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	8.03013 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	1.66263 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	4.13888 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.77259 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	1.1263 (mg/s)
	mass flux in river at SW-002	M_r2 =	2.3976 (mg/s)
	mass flux in river at SW-003	M_r3 =	2.7794 (mg/s)
	mass flux in river at SW-004	M_r4 =	5.0311 (mg/s)
	mass flux in river at SW-004A	M_r4A =	10.4455 (mg/s)
	mass flux in river at SW-005	M_r5 =	18.4756 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	20.1382 (mg/s)
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C_r1 =	0.03373 (mg/L)
	concentration in river at SW-002	C_r2 =	0.05504 (mg/L)
	concentration in river at SW-003	C_r3 =	0.05962 (mg/L)
	concentration in river at SW-004	C_r4 =	0.08607 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.10508 (mg/L)
	concentration in river at SW-005	C_r5 =	0.11290 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.11381 (mg/L)
	concentration in Colby Lake	C_cl =	0.07635 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Propsed Action

Case	Year 1			
Parameter	Arsenic			
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0021 (mg/L)	
	concentration of surface water into SW-002	C s2 =	0.0021 (mg/L)	
	concentration of surface water into SW-003	C s3 =	0.0021 (mg/L)	
	concentration of surface water into SW-004	C s4 =	0.0021 (mg/L)	
	concentration of surface water into SW-004A	C s4A =	0.0021 (mg/L)	
	concentration of surface water into SW-005	C s5 =	0.0021 (mg/L)	
	concentration of surface water into USGS Gage	C s6 =	0.0021 (mg/L)	
	concentration of surface water into Colby Lake	C scl =	0.0021 (mg/L)	
	concentration of surface water inflow from Hoyt Lakes WWTP	C shi =	0.0021 (mg/L)	
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0065 (mg/L)	
	concentration of West Pit overflow	C sms =	#N/A (mg/L)	
	concentration of ground water into SW-001	C g1 =	0.0022 (mg/L)	
	concentration of ground water into SW-002	C g2 =	0.0022 (mg/L)	
	concentration of ground water into SW-003	C g3 =	0.0022 (mg/L)	
	concentration of ground water into SW-004	C g4 =	0.0022 (mg/L)	
	concentration of ground water into SW-004A	C g4A =	0.0022 (mg/L)	
	concentration of ground water into SW-005	C g5 =	0.0022 (mg/L)	
	concentration of ground water into USGS Gage	C g6 =	0.0022 (mg/L)	
	concentration of ground water into Colby Lake	C gcl =	0.0022 (mg/L)	
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)	
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)	
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	0.0010 (mg/L)	
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	0.6860 (mg/L)	
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.7100 (mg/L)	
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0510 (mg/L)	
	concentration of liner leakage from LOSP	C gC4LO =	0.0044 (mg/L)	
	concentration of seepage from Overburden (Storage)	C gOS =	0.0016 (mg/L)	
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	0.0027 (mg/L)	
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	0.0010 (mg/L)	
	concentration of liner leakage from Cat 3 sumps	C gC3s =	0.6860 (mg/L)	
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.7100 (mg/L)	
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0510 (mg/L)	
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0044 (mg/L)	
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0016 (mg/L)	
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	0.0016 (mg/L)	
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0022 (mg/L)	
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0022 (mg/L)	
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0022 (mg/L)	
	concentration of liner leakage from WWTF pond	C gWTFp =	0.2200 (mg/L)	
				Low Flow
	Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	(mg/s)
		mass flux of ground water into SW-001	M g1 =	0.01100 (mg/s)
mass flux of surface discharges from upstream of PM-1		M sns =	0.18395 (mg/s)	
mass flux of surface water into SW-002		M s2 =	(mg/s)	
mass flux of ground water into SW-002		M g2 =	0.02197 (mg/s)	
mass flux of surface water into SW-003		M s3 =	(mg/s)	
mass flux of ground water into SW-003		M g3 =	0.00659 (mg/s)	
mass flux of seepage from East Pit to SW-003		M gep_003 =	#N/A (mg/s)	
mass flux of liner leakage from Cat 3 stockpile to SW-003		M gC3_003 =	0.00005 (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-003		M gC3LO_003 =	0.00003 (mg/s)	
mass flux of liner leakage from Cat 3 sumps to SW-003		M gC3s_003 =	0.00000 (mg/s)	
mass flux of surface water into SW-004		M s4 =	(mg/s)	
mass flux of ground water into SW-004		M g4 =	0.01974 (mg/s)	
mass flux of seepage from East Pit to SW-004		M gep_004 =	#N/A (mg/s)	
mass flux of seepage from West Pit		M gwp =	#N/A (mg/s)	
mass flux of liner leakage from Cat 3 stockpile to SW-004		M gC3_004 =	(mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-004		M gC3LO_004 =	0.00003 (mg/s)	
mass flux of liner leakage from Cat 4 stockpile		M gC4 =	0.00000 (mg/s)	
mass flux of liner leakage from LOSP		M gC4LO =	0.00000 (mg/s)	
mass flux of seepage from Overburden (Storage)		M gOS =	0.00338 (mg/s)	
mass flux of liner leakage from Cat 3LO sumps to SW-004		M gC3LOs_004 =	0.00000 (mg/s)	
mass flux of liner leakage from Cat 4 sumps		M gC4s =	0.00000 (mg/s)	
mass flux of liner leakage from LOSP sumps		M gC4LOs =	0.00000 (mg/s)	
mass flux of seepage from Overburden Ponds - PW1		M gOp1 =	0.00083 (mg/s)	
mass flux of leakage from Haul Road Pond - PW2		M gHRp2 =	0.00000 (mg/s)	
mass flux of leakage from Haul Road Pond - PW4		M gHRp4 =	0.00000 (mg/s)	
mass flux of leakage from RTH Pond - PW3		M gRTHp =	0.00000 (mg/s)	
mass flux of liner leakage from WWTF pond		M gWTFp =	(mg/s)	
mass flux of surface water into SW-004A		M s4A =	(mg/s)	
mass flux of ground water into SW-004A		M g4A =	0.08506 (mg/s)	
mass flux of West Pit overflow		M sms =	#N/A (mg/s)	
mass flux of liner leakage from Cat 1/2 stockpile		M gC12 =	(mg/s)	
mass flux of liner leakage from Cat 1/2 sumps		M gC12s =	0.00000 (mg/s)	
mass flux of seepage from Overburden (Cat 1/2)		M gO12 =	0.00152 (mg/s)	
mass flux of seepage from Overburden Pond - PW7		M gOp7 =	0.00157 (mg/s)	
mass flux of surface water into SW-005		M s5 =	(mg/s)	
mass flux of ground water into SW-005		M g5 =	0.13876 (mg/s)	
mass flux of surface water into USGS Gage		M s6 =	(mg/s)	
mass flux of ground water into USGS Gage		M g6 =	0.02873 (mg/s)	
mass flux of surface water into Colby Lake		M scl =	(mg/s)	
mass flux of ground water into Colby Lake		M gcl =	0.07152 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP		M shi =	0.02329 (mg/s)	
				Low Flow
Mass balance at each node	mass flux in river at SW-001	M r1 =	0.1950 (mg/s)	
	mass flux in river at SW-002	M r2 =	0.2169 (mg/s)	
	mass flux in river at SW-003	M r3 =	0.2236 (mg/s)	
	mass flux in river at SW-004	M r4 =	0.2476 (mg/s)	
	mass flux in river at SW-004A	M r4A =	0.3357 (mg/s)	
	mass flux in river at SW-005	M r5 =	0.4745 (mg/s)	
	mass flux in river at USGS Gage	M r6 =	0.5032 (mg/s)	
	mass flux into Colby Lake	M cl =	0.5980 (mg/s)	
			Low Flow	
Convert mass flux to concentration	concentration in river at SW-001	C r1 =	0.00584 (mg/L)	
	concentration in river at SW-002	C r2 =	0.00498 (mg/L)	
	concentration in river at SW-003	C r3 =	0.00480 (mg/L)	
	concentration in river at SW-004	C r4 =	0.00424 (mg/L)	
	concentration in river at SW-004A	C r4A =	0.00338 (mg/L)	
	concentration in river at SW-005	C r5 =	0.00290 (mg/L)	
	concentration in river at USGS Gage	C r6 =	0.00284 (mg/L)	
	concentration in Colby Lake	C cl =	0.00220 (mg/L)	

Partridge River Mass-Balance Model - Mine Site - Propsed Action

Case	Year 1		
Parameter	Boron		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0450 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0450 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0450 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0450 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0450 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0450 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0450 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0450 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0450 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0960 (mg/L)
	concentration of West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0870 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0870 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0870 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0870 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0870 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0870 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0870 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0870 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	0.0008 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	0.6960 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.7600 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.7600 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.1267 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0622 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	0.0370 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	0.0008 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C gC3s =	0.6960 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.7600 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.7600 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.1267 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0622 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	0.0622 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0870 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0870 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0870 (mg/L)
	concentration of liner leakage from WWTF pond	C gWTFp =	0.5000 (mg/L)
Low Flow			
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	- (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.44318 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	2.71680 (mg/s)
	mass flux of surface water into SW-002	M s2 =	- (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.88478 (mg/s)
	mass flux of surface water into SW-003	M s3 =	- (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.26559 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M gC3_003 =	0.00005 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00003 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	- (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.79495 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00003 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00001 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00002 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.13461 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.03328 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00003 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00007 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	(mg/s)
	mass flux of surface water into SW-004A	M s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M g4A =	3.42619 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M gO12 =	0.02084 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	0.06253 (mg/s)
	mass flux of surface water into SW-005	M s5 =	- (mg/s)
	mass flux of ground water into SW-005	M g5 =	5.58897 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	1.15719 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	2.88066 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.49667 (mg/s)
Low Flow			
Mass balance at each node	mass flux in river at SW-001	M r1 =	3.1600 (mg/s)
	mass flux in river at SW-002	M r2 =	4.0448 (mg/s)
	mass flux in river at SW-003	M r3 =	4.3104 (mg/s)
	mass flux in river at SW-004	M r4 =	5.2734 (mg/s)
	mass flux in river at SW-004A	M r4A =	8.7830 (mg/s)
	mass flux in river at SW-005	M r5 =	14.3720 (mg/s)
	mass flux in river at USGS Gage	M r6 =	15.5292 (mg/s)
	mass flux into Colby Lake	M cl =	18.9065 (mg/s)
Low Flow			
Convert mass flux to concentration	concentration in river at SW-001	C r1 =	0.09463 (mg/L)
	concentration in river at SW-002	C r2 =	0.09285 (mg/L)
	concentration in river at SW-003	C r3 =	0.09247 (mg/L)
	concentration in river at SW-004	C r4 =	0.09021 (mg/L)
	concentration in river at SW-004A	C r4A =	0.08836 (mg/L)
	concentration in river at SW-005	C r5 =	0.08782 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.08776 (mg/L)
	concentration in Colby Lake	C cl =	0.05094 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Propsed Action

Case	Year 1		
Parameter	Barium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0077 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0077 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0077 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0077 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0077 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0077 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0077 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0077 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0077 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0050 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0219 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0219 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0219 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0219 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0219 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0219 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0219 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0219 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0017 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.1900 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.1900 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.1900 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0339 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0168 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0140 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0017 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.1900 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.1900 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.1900 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0339 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0168 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	0.0168 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0219 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0219 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0219 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.1500 (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of surface water into SW-001	M_g1 =	0.11166 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.14150 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.22292 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.06692 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.20029 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.03643 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00901 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00001 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00002 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	- (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.86324 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.00789 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	0.01692 (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	1.40816 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.29156 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.72579 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.08476 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	0.2532 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.4761 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.5430 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.7888 (mg/s)
	mass flux in river at SW-004A	M_r4A =	1.6768 (mg/s)
	mass flux in river at SW-005	M_r5 =	3.0850 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	3.3766 (mg/s)
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C_r1 =	0.00758 (mg/L)
	concentration in river at SW-002	C_r2 =	0.01093 (mg/L)
	concentration in river at SW-003	C_r3 =	0.01165 (mg/L)
	concentration in river at SW-004	C_r4 =	0.01349 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.01687 (mg/L)
	concentration in river at SW-005	C_r5 =	0.01885 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.01908 (mg/L)
	concentration in Colby Lake	C_cl =	0.00933 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Propsed Action

Case	Year 1		
Parameter	Beryllium		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0001 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0001 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0001 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0001 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0001 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0001 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0001 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0001 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0001 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0001 (mg/L)
	concentration of West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0001 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0001 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0001 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0001 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0001 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0001 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0001 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0001 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	0.0000 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0002 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0023 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.0023 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	- (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	0.0000 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C gC3s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.0002 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0023 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0023 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	- (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	- (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0001 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0001 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0001 (mg/L)
	concentration of liner leakage from WWTF pond	C gWTFp =	0.0018 (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M s1 =	(mg/s)
	mass flux of ground water into SW-001	M g1 =	0.00074 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.00283 (mg/s)
	mass flux of surface water into SW-002	M s2 =	(mg/s)
	mass flux of ground water into SW-002	M g2 =	0.00147 (mg/s)
	mass flux of surface water into SW-003	M s3 =	(mg/s)
	mass flux of ground water into SW-003	M g3 =	0.00044 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	(mg/s)
	mass flux of ground water into SW-004	M g4 =	0.00132 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M gC3_004 =	(mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	(mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	(mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	(mg/s)
	mass flux of surface water into SW-004A	M s4A =	(mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.00571 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M gC12 =	(mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M gO12 =	(mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	(mg/s)
	mass flux of surface water into SW-005	M s5 =	(mg/s)
	mass flux of ground water into SW-005	M g5 =	0.00931 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	(mg/s)
mass flux of ground water into USGS Gage	M g6 =	0.00193 (mg/s)	
mass flux of surface water into Colby Lake	M scl =	(mg/s)	
mass flux of ground water into Colby Lake	M gcl =	0.00480 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.00110 (mg/s)	
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M r1 =	0.0036 (mg/s)
	mass flux in river at SW-002	M r2 =	0.0050 (mg/s)
	mass flux in river at SW-003	M r3 =	0.0055 (mg/s)
	mass flux in river at SW-004	M r4 =	0.0068 (mg/s)
	mass flux in river at SW-004A	M r4A =	0.0125 (mg/s)
	mass flux in river at SW-005	M r5 =	0.0218 (mg/s)
	mass flux in river at USGS Gage	M r6 =	0.0238 (mg/s)
mass flux into Colby Lake	M cl =	0.0297 (mg/s)	
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C r1 =	0.00011 (mg/L)
	concentration in river at SW-002	C r2 =	0.00012 (mg/L)
	concentration in river at SW-003	C r3 =	0.00012 (mg/L)
	concentration in river at SW-004	C r4 =	0.00012 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00013 (mg/L)
	concentration in river at SW-005	C r5 =	0.00013 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00013 (mg/L)
	concentration in Colby Lake	C cl =	0.00011 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Propsed Action

Case	Year 1
Parameter	Calcium
Input concentration data	concentration of surface water into SW-001
	concentration of surface water into SW-002
	concentration of surface water into SW-003
	concentration of surface water into SW-004
	concentration of surface water into SW-004A
	concentration of surface water into SW-005
	concentration of surface water into USGS Gage
	concentration of surface water into Colby Lake
	concentration of surface water inflow from Hoyt Lakes WWTP
	concentration of surface water discharges from upstream of PM-1
	concentration of West Pit overflow
	concentration of ground water into SW-001
	concentration of ground water into SW-002
	concentration of ground water into SW-003
	concentration of ground water into SW-004
	concentration of ground water into SW-004A
	concentration of ground water into SW-005
	concentration of ground water into USGS Gage
	concentration of ground water into Colby Lake
	concentration of ground water seepage from East Pit
	concentration of ground water seepage from West Pit
	concentration of liner leakage from Cat 1/2 stockpile
	concentration of liner leakage from Cat 3 stockpile
	concentration of liner leakage from Cat 3LO stockpile
	concentration of liner leakage from Cat 4 stockpile
	concentration of liner leakage from LOSP
	concentration of seepage from Overburden (Storage)
	concentration of seepage from Overburden (Cat 1/2)
	concentration of liner leakage from Cat 1/2 sumps
	concentration of liner leakage from Cat 3 sumps
	concentration of liner leakage from Cat 3LO sumps
	concentration of liner leakage from Cat 4 sumps
	concentration of liner leakage from LOSP sumps
	concentration of seepage from Overburden Ponds - PW1
	concentration of seepage from Overburden Pond - PW7
	concentration of leakage from Haul Road Pond - PW2
	concentration of leakage from Haul Road Pond - PW4
	concentration of leakage from RTH Pond - PW3
	concentration of liner leakage from WWTF pond
Convert concentration to mass flux	Low Flow
	mass flux of surface water into SW-001
	mass flux of surface water into SW-002
	mass flux of surface water discharges from upstream of PM-1
	mass flux of surface water into SW-003
	mass flux of surface water into SW-004
	mass flux of surface water into SW-005
	mass flux of surface water into USGS Gage
	mass flux of surface water into Colby Lake
	mass flux of surface water inflow from Hoyt Lakes WWTP
	mass flux of surface water seepage from East Pit
	mass flux of surface water seepage from West Pit
	mass flux of surface water seepage from Cat 1/2 stockpile
	mass flux of surface water seepage from Cat 3 stockpile
	mass flux of surface water seepage from Cat 3LO stockpile
	mass flux of surface water seepage from Cat 4 stockpile
	mass flux of surface water seepage from LOSP
	mass flux of surface water seepage from Overburden (Storage)
	mass flux of surface water seepage from Overburden (Cat 1/2)
	mass flux of surface water seepage from Cat 1/2 sumps
	mass flux of surface water seepage from Cat 3 sumps
	mass flux of surface water seepage from Cat 3LO sumps
	mass flux of surface water seepage from Cat 4 sumps
	mass flux of surface water seepage from LOSP sumps
	mass flux of surface water seepage from Overburden Ponds - PW1
	mass flux of surface water seepage from Overburden Pond - PW7
	mass flux of surface water seepage from Haul Road Pond - PW2
	mass flux of surface water seepage from Haul Road Pond - PW4
	mass flux of surface water seepage from RTH Pond - PW3
	mass flux of surface water seepage from WWTF pond
	mass flux of surface water into SW-001
	mass flux of surface water into SW-002
	mass flux of surface water into SW-003
	mass flux of surface water into SW-004
	mass flux of surface water into SW-005
	mass flux of surface water into USGS Gage
	mass flux of surface water into Colby Lake
	mass flux of surface water inflow from Hoyt Lakes WWTP
Mass balance at each node	Low Flow
	mass flux in river at SW-001
	mass flux in river at SW-002
	mass flux in river at SW-003
	mass flux in river at SW-004
	mass flux in river at SW-004A
	mass flux in river at SW-005
	mass flux in river at USGS Gage
	mass flux into Colby Lake
	Low Flow
	concentration in river at SW-001
	concentration in river at SW-002
	concentration in river at SW-003
	concentration in river at SW-004
	concentration in river at SW-004A
	concentration in river at SW-005
	concentration in river at USGS Gage
	concentration in Colby Lake
Convert mass flux to concentration	Low Flow
	concentration in river at SW-001
	concentration in river at SW-002
	concentration in river at SW-003
	concentration in river at SW-004
	concentration in river at SW-004A
	concentration in river at SW-005
	concentration in river at USGS Gage
	concentration in Colby Lake
	Low Flow
	concentration in river at SW-001
	concentration in river at SW-002
	concentration in river at SW-003
	concentration in river at SW-004
	concentration in river at SW-004A
	concentration in river at SW-005
	concentration in river at USGS Gage
	concentration in Colby Lake



Partridge River Mass-Balance Model - Mine Site - Propsed Action

Case	Year 1		
Parameter	Cadmium		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0001 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0001 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0001 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0001 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0001 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0001 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0001 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0001 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0001 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0001 (mg/L)
	concentration of West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0001 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0001 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0001 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0001 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0001 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0001 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0001 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0001 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	0.0000 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0002 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0149 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.0149 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0001 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	0.0000 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C gC3s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.0002 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0149 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0149 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0001 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	0.0001 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0001 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0001 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0001 (mg/L)
	concentration of liner leakage from WWTF pond	C gWTFp =	0.0069 (mg/L)
			Low Flow
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	(mg/s)
	mass flux of ground water into SW-001	M g1 =	0.00051 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.00283 (mg/s)
	mass flux of surface water into SW-002	M s2 =	(mg/s)
	mass flux of ground water into SW-002	M g2 =	0.00102 (mg/s)
	mass flux of surface water into SW-003	M s3 =	(mg/s)
	mass flux of ground water into SW-003	M g3 =	0.00031 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	(mg/s)
	mass flux of ground water into SW-004	M g4 =	0.00091 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M gC3_004 =	(mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.00013 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.00003 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	(mg/s)
	mass flux of surface water into SW-004A	M s4A =	(mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.00394 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M gC12 =	(mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M gO12 =	(mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	0.00006 (mg/s)
	mass flux of surface water into SW-005	M s5 =	(mg/s)
	mass flux of ground water into SW-005	M g5 =	0.00642 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	(mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.00133 (mg/s)
mass flux of surface water into Colby Lake	M scl =	(mg/s)	
mass flux of ground water into Colby Lake	M gcl =	0.00331 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.00110 (mg/s)	
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M r1 =	0.0033 (mg/s)
	mass flux in river at SW-002	M r2 =	0.0044 (mg/s)
	mass flux in river at SW-003	M r3 =	0.0047 (mg/s)
	mass flux in river at SW-004	M r4 =	0.0057 (mg/s)
	mass flux in river at SW-004A	M r4A =	0.0097 (mg/s)
	mass flux in river at SW-005	M r5 =	0.0162 (mg/s)
	mass flux in river at USGS Gage	M r6 =	0.0175 (mg/s)
mass flux into Colby Lake	M cl =	0.0219 (mg/s)	
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C r1 =	0.00010 (mg/L)
	concentration in river at SW-002	C r2 =	0.00010 (mg/L)
	concentration in river at SW-003	C r3 =	0.00010 (mg/L)
	concentration in river at SW-004	C r4 =	0.00010 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00010 (mg/L)
	concentration in river at SW-005	C r5 =	0.00010 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00010 (mg/L)
	concentration in Colby Lake	C cl =	0.00010 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Propsed Action

Case	Year 1
Parameter	Chloride
Input concentration data	concentration of surface water into SW-001
	concentration of surface water into SW-002
	concentration of surface water into SW-003
	concentration of surface water into SW-004
	concentration of surface water into SW-004A
	concentration of surface water into SW-005
	concentration of surface water into USGS Gage
	concentration of surface water into Colby Lake
	concentration of surface water inflow from Hoyt Lakes WWTP
	concentration of surface water discharges from upstream of PM-1
	concentration of West Pit overflow
	concentration of ground water into SW-001
	concentration of ground water into SW-002
	concentration of ground water into SW-003
	concentration of ground water into SW-004
	concentration of ground water into SW-004A
	concentration of ground water into SW-005
	concentration of ground water into USGS Gage
	concentration of ground water into Colby Lake
	concentration of ground water seepage from East Pit
	concentration of ground water seepage from West Pit
	concentration of liner leakage from Cat 1/2 stockpile
	concentration of liner leakage from Cat 3 stockpile
	concentration of liner leakage from Cat 3LO stockpile
	concentration of liner leakage from Cat 4 stockpile
	concentration of liner leakage from LOSP
	concentration of seepage from Overburden (Storage)
	concentration of seepage from Overburden (Cat 1/2)
	concentration of liner leakage from Cat 1/2 sumps
	concentration of liner leakage from Cat 3 sumps
	concentration of liner leakage from Cat 3LO sumps
	concentration of liner leakage from Cat 4 sumps
	concentration of liner leakage from LOSP sumps
	concentration of seepage from Overburden Ponds - PW1
	concentration of seepage from Overburden Pond - PW7
	concentration of leakage from Haul Road Pond - PW2
	concentration of leakage from Haul Road Pond - PW4
	concentration of leakage from RTH Pond - PW3
	concentration of liner leakage from WWTF pond
Convert concentration to mass flux	Low Flow
	mass flux of surface water into SW-001
	mass flux of surface water into SW-002
	mass flux of surface discharges from upstream of PM-1
	mass flux of surface water into SW-002
	mass flux of ground water into SW-002
	mass flux of surface water into SW-003
	mass flux of ground water into SW-003
	mass flux of seepage from East Pit to SW-003
	mass flux of liner leakage from Cat 3 stockpile to SW-003
	mass flux of liner leakage from Cat 3LO stockpile to SW-003
	mass flux of liner leakage from Cat 3 sumps to SW-003
	mass flux of surface water into SW-004
	mass flux of ground water into SW-004
	mass flux of seepage from East Pit to SW-004
	mass flux of seepage from West Pit
	mass flux of liner leakage from Cat 3 stockpile to SW-004
	mass flux of liner leakage from Cat 3LO stockpile to SW-004
	mass flux of liner leakage from Cat 4 stockpile
	mass flux of liner leakage from LOSP
	mass flux of seepage from Overburden (Storage)
	mass flux of liner leakage from Cat 3LO sumps to SW-004
	mass flux of liner leakage from Cat 4 sumps
	mass flux of liner leakage from LOSP sumps
	mass flux of seepage from Overburden Ponds - PW1
	mass flux of leakage from Haul Road Pond - PW2
	mass flux of leakage from Haul Road Pond - PW4
	mass flux of leakage from RTH Pond - PW3
	mass flux of liner leakage from WWTF pond
	mass flux of surface water into SW-004A
	mass flux of ground water into SW-004A
	mass flux of West Pit overflow
	mass flux of liner leakage from Cat 1/2 stockpile
	mass flux of liner leakage from Cat 1/2 sumps
	mass flux of seepage from Overburden (Cat 1/2)
	mass flux of seepage from Overburden Pond - PW7
	mass flux of surface water into SW-005
	mass flux of ground water into SW-005
	mass flux of surface water into USGS Gage
	mass flux of ground water into USGS Gage
	mass flux of surface water into Colby Lake
	mass flux of ground water into Colby Lake
	mass flux of surface water from Hoyt Lakes WWTP
Mass balance at each node	Low Flow
	mass flux in river at SW-001
	mass flux in river at SW-002
	mass flux in river at SW-003
	mass flux in river at SW-004
	mass flux in river at SW-004A
	mass flux in river at SW-005
Convert mass flux to concentration	Low Flow
	concentration in river at SW-001
	concentration in river at SW-002
	concentration in river at SW-003
	concentration in river at SW-004
	concentration in river at SW-004A
	concentration in river at SW-005
	concentration in river at USGS Gage
	concentration in Colby Lake



Partridge River Mass-Balance Model - Mine Site - Propsed Action

Case	Year 1		
Parameter	Cobalt		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0005 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0005 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0005 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0005 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0005 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0005 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0005 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0005 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0005 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0005 (mg/L)
	concentration of West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0017 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0017 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0017 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0017 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0017 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0017 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0017 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0017 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	0.0000 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	0.0520 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0520 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	3.6503 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.3145 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0011 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	0.0013 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	0.0000 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C gC3s =	0.0520 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.0520 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	3.6503 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.3145 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0011 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	0.0011 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0017 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0017 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0017 (mg/L)
	concentration of liner leakage from WWTF pond	C gWTFp =	0.2000 (mg/L)
			Low Flow
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	(mg/s)
	mass flux of ground water into SW-001	M g1 =	0.00841 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.01415 (mg/s)
	mass flux of surface water into SW-002	M s2 =	(mg/s)
	mass flux of ground water into SW-002	M g2 =	0.01678 (mg/s)
	mass flux of surface water into SW-003	M s3 =	(mg/s)
	mass flux of ground water into SW-003	M g3 =	0.00504 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	(mg/s)
	mass flux of ground water into SW-004	M g4 =	0.01508 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M gC3_004 =	(mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00004 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00004 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.00240 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.00059 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	(mg/s)
	mass flux of surface water into SW-004A	M s4A =	(mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.06498 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M gC12 =	(mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M gO12 =	0.00073 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	0.00112 (mg/s)
	mass flux of surface water into SW-005	M s5 =	(mg/s)
	mass flux of ground water into SW-005	M g5 =	0.10600 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	(mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.02195 (mg/s)
mass flux of surface water into Colby Lake	M scl =	(mg/s)	
mass flux of ground water into Colby Lake	M gcl =	0.05463 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.00552 (mg/s)	
			Low Flow
Mass balance at each node	mass flux in river at SW-001	M r1 =	0.0226 (mg/s)
	mass flux in river at SW-002	M r2 =	0.0393 (mg/s)
	mass flux in river at SW-003	M r3 =	0.0444 (mg/s)
	mass flux in river at SW-004	M r4 =	0.0625 (mg/s)
	mass flux in river at SW-004A	M r4A =	0.1294 (mg/s)
	mass flux in river at SW-005	M r5 =	0.2354 (mg/s)
	mass flux in river at USGS Gage	M r6 =	0.2573 (mg/s)
	mass flux into Colby Lake	M cl =	0.3175 (mg/s)
			Low Flow
Convert mass flux to concentration	concentration in river at SW-001	C r1 =	0.00068 (mg/L)
	concentration in river at SW-002	C r2 =	0.00090 (mg/L)
	concentration in river at SW-003	C r3 =	0.00095 (mg/L)
	concentration in river at SW-004	C r4 =	0.00107 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00130 (mg/L)
	concentration in river at SW-005	C r5 =	0.00144 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00145 (mg/L)
	concentration in Colby Lake	C cl =	0.00064 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Propsed Action

Case Parameter	Year 1 Copper		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0017 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0017 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0017 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0017 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0017 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0017 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0017 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0017 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0190 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0012 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0030 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0030 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0030 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0030 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0030 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0030 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0030 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0030 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0003 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.0920 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0920 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.6589 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0568 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0214 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0170 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0003 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.0920 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0920 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.6589 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0568 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0214 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	0.0214 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0030 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0030 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0030 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0970 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.01503 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.03509 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.03000 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00901 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.02696 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00001 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.04640 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.01147 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	- (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.11618 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.00958 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	0.02155 (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.18951 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.03924 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.09768 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.20970 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	0.0501 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.0801 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.0891 (mg/s)
	mass flux in river at SW-004A	M_r4 =	0.1740 (mg/s)
	mass flux in river at SW-005	M_r5 =	0.3213 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	0.5108 (mg/s)
	mass flux into Colby Lake	M_cl =	0.8574 (mg/s)
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C_r1 =	0.00150 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00184 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00191 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00298 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00323 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00312 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00311 (mg/L)
	concentration in Colby Lake	C_cl =	0.00202 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Propsed Action

Case	Year 1
Parameter	Fluoride
Input concentration data	concentration of surface water into SW-001
	concentration of surface water into SW-002
	concentration of surface water into SW-003
	concentration of surface water into SW-004
	concentration of surface water into SW-004A
	concentration of surface water into SW-005
	concentration of surface water into USGS Gage
	concentration of surface water into Colby Lake
	concentration of surface water inflow from Hoyt Lakes WWTP
	concentration of surface water discharges from upstream of PM-1
	concentration of West Pit overflow
	concentration of ground water into SW-001
	concentration of ground water into SW-002
	concentration of ground water into SW-003
	concentration of ground water into SW-004
	concentration of ground water into SW-004A
	concentration of ground water into SW-005
	concentration of ground water into USGS Gage
	concentration of ground water into Colby Lake
	concentration of ground water seepage from East Pit
	concentration of ground water seepage from West Pit
	concentration of liner leakage from Cat 1/2 stockpile
	concentration of liner leakage from Cat 3 stockpile
	concentration of liner leakage from Cat 3LO stockpile
	concentration of liner leakage from Cat 4 stockpile
	concentration of liner leakage from LOSP
	concentration of seepage from Overburden (Storage)
	concentration of seepage from Overburden (Cat 1/2)
	concentration of liner leakage from Cat 1/2 sumps
	concentration of liner leakage from Cat 3 sumps
	concentration of liner leakage from Cat 3LO sumps
	concentration of liner leakage from Cat 4 sumps
	concentration of liner leakage from LOSP sumps
	concentration of seepage from Overburden Ponds - PW1
	concentration of seepage from Overburden Pond - PW7
	concentration of leakage from Haul Road Pond - PW2
	concentration of leakage from Haul Road Pond - PW4
	concentration of leakage from RTH Pond - PW3
	concentration of liner leakage from WWTF pond
Convert concentration to mass flux	Low Flow
	mass flux of surface water into SW-001
	mass flux of surface water into SW-002
	mass flux of surface water discharges from upstream of PM-1
	mass flux of surface water into SW-003
	mass flux of surface water into SW-004
	mass flux of surface water into SW-005
	mass flux of surface water into USGS Gage
	mass flux of surface water into Colby Lake
	mass flux of surface water inflow from Hoyt Lakes WWTP
	mass flux of surface water seepage from East Pit
	mass flux of surface water seepage from West Pit
	mass flux of liner leakage from Cat 1/2 stockpile
	mass flux of liner leakage from Cat 3 stockpile
	mass flux of liner leakage from Cat 3LO stockpile
	mass flux of liner leakage from Cat 4 stockpile
	mass flux of liner leakage from LOSP
	mass flux of seepage from Overburden (Storage)
	mass flux of seepage from Overburden (Cat 1/2)
	mass flux of seepage from Overburden Pond - PW7
	mass flux of seepage from Overburden Ponds - PW1
	mass flux of leakage from Haul Road Pond - PW2
	mass flux of leakage from Haul Road Pond - PW4
	mass flux of leakage from RTH Pond - PW3
	mass flux of liner leakage from WWTF pond
	mass flux of surface water into SW-004A
	mass flux of ground water into SW-004A
	mass flux of West Pit overflow
	mass flux of liner leakage from Cat 1/2 stockpile
	mass flux of liner leakage from Cat 1/2 sumps
	mass flux of seepage from Overburden (Cat 1/2)
	mass flux of seepage from Overburden Pond - PW7
	mass flux of surface water into SW-005
	mass flux of ground water into SW-005
	mass flux of surface water into USGS Gage
	mass flux of ground water into USGS Gage
	mass flux of surface water into Colby Lake
	mass flux of ground water into Colby Lake
	mass flux of surface water from Hoyt Lakes WWTP
Mass balance at each node	Low Flow
	mass flux in river at SW-001
	mass flux in river at SW-002
	mass flux in river at SW-003
	mass flux in river at SW-004
	mass flux in river at SW-004A
	mass flux in river at SW-005
Convert mass flux to concentration	Low Flow
	concentration in river at SW-001
	concentration in river at SW-002
	concentration in river at SW-003
	concentration in river at SW-004
	concentration in river at SW-004A
	concentration in river at SW-005
	concentration in river at USGS Gage
	concentration in Colby Lake

Partridge River Mass-Balance Model - Mine Site - Propsed Action

Case	Year 1
Parameter	Iron
Input concentration data	concentration of surface water into SW-001
	concentration of surface water into SW-002
	concentration of surface water into SW-003
	concentration of surface water into SW-004
	concentration of surface water into SW-004A
	concentration of surface water into SW-005
	concentration of surface water into USGS Gage
	concentration of surface water into Colby Lake
	concentration of surface water inflow from Hoyt Lakes WWTP
	concentration of surface water discharges from upstream of PM-1
	concentration of West Pit overflow
	concentration of ground water into SW-001
	concentration of ground water into SW-002
	concentration of ground water into SW-003
	concentration of ground water into SW-004
	concentration of ground water into SW-004A
	concentration of ground water into SW-005
	concentration of ground water into USGS Gage
	concentration of ground water into Colby Lake
	concentration of ground water seepage from East Pit
	concentration of ground water seepage from West Pit
	concentration of liner leakage from Cat 1/2 stockpile
	concentration of liner leakage from Cat 3 stockpile
	concentration of liner leakage from Cat 3LO stockpile
	concentration of liner leakage from Cat 4 stockpile
	concentration of liner leakage from LOSP
	concentration of seepage from Overburden (Storage)
	concentration of seepage from Overburden (Cat 1/2)
	concentration of liner leakage from Cat 1/2 sumps
	concentration of liner leakage from Cat 3 sumps
	concentration of liner leakage from Cat 3LO sumps
	concentration of liner leakage from Cat 4 sumps
	concentration of liner leakage from LOSP sumps
	concentration of seepage from Overburden Ponds - PW1
	concentration of seepage from Overburden Pond - PW7
	concentration of leakage from Haul Road Pond - PW2
	concentration of leakage from Haul Road Pond - PW4
	concentration of leakage from RTH Pond - PW3
	concentration of liner leakage from WWTF pond
Convert concentration to mass flux	mass flux of surface water into SW-001
	mass flux of surface water into SW-002
	mass flux of surface water discharges from upstream of PM-1
	mass flux of surface water into SW-002
	mass flux of ground water into SW-002
	mass flux of surface water into SW-003
	mass flux of ground water into SW-003
	mass flux of seepage from East Pit to SW-003
	mass flux of liner leakage from Cat 3 stockpile to SW-003
	mass flux of liner leakage from Cat 3LO stockpile to SW-003
	mass flux of liner leakage from Cat 3 sumps to SW-003
	mass flux of surface water into SW-004
	mass flux of ground water into SW-004
	mass flux of seepage from East Pit to SW-004
	mass flux of seepage from West Pit
	mass flux of liner leakage from Cat 3 stockpile to SW-004
	mass flux of liner leakage from Cat 3LO stockpile to SW-004
	mass flux of liner leakage from Cat 4 stockpile
	mass flux of liner leakage from LOSP
	mass flux of seepage from Overburden (Storage)
	mass flux of liner leakage from Cat 3LO sumps to SW-004
	mass flux of liner leakage from Cat 4 sumps
	mass flux of liner leakage from LOSP sumps
	mass flux of seepage from Overburden Ponds - PW1
	mass flux of leakage from Haul Road Pond - PW2
	mass flux of leakage from Haul Road Pond - PW4
	mass flux of leakage from RTH Pond - PW3
	mass flux of liner leakage from WWTF pond
	mass flux of surface water into SW-004A
	mass flux of ground water into SW-004A
	mass flux of West Pit overflow
	mass flux of liner leakage from Cat 1/2 stockpile
	mass flux of liner leakage from Cat 1/2 sumps
	mass flux of seepage from Overburden (Cat 1/2)
	mass flux of seepage from Overburden Pond - PW7
	mass flux of surface water into SW-005
	mass flux of ground water into SW-005
	mass flux of surface water into USGS Gage
	mass flux of ground water into USGS Gage
	mass flux of surface water into Colby Lake
	mass flux of ground water into Colby Lake
	mass flux of surface water from Hoyt Lakes WWTP
Mass balance at each node	mass flux in river at SW-001
	mass flux in river at SW-002
	mass flux in river at SW-003
	mass flux in river at SW-004
	mass flux in river at SW-004A
	mass flux in river at SW-005
	mass flux in river at USGS Gage
Convert mass flux to concentration	concentration in river at SW-001
	concentration in river at SW-002
	concentration in river at SW-003
	concentration in river at SW-004
	concentration in river at SW-004A
	concentration in river at SW-005
	concentration in river at USGS Gage

Partridge River Mass-Balance Model - Mine Site - Propsed Action

Case	Year 1		
Parameter	Hardness		
Input concentration data	concentration of surface water into SW-001	C_s1 =	110.0000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	110.0000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	110.0000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	110.0000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	110.0000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	110.0000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	110.0000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	110.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	110.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	110.0000 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	66.4200 (mg/L)
	concentration of ground water into SW-002	C_g2 =	66.4200 (mg/L)
	concentration of ground water into SW-003	C_g3 =	66.4200 (mg/L)
	concentration of ground water into SW-004	C_g4 =	66.4200 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	66.4200 (mg/L)
	concentration of ground water into SW-005	C_g5 =	66.4200 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	66.4200 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	66.4200 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.8365 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	1,431.7063 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	1,729.3495 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	742.4878 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	63.9642 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	43.5200 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	71.5000 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.8365 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	1,431.7063 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	1,729.3495 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	742.4878 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	63.9642 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	43.5200 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	43.5200 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	66.4200 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	66.4200 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	66.4200 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	629.0000 (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	338.34348 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	3,113.00000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	675.48367 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	202.76516 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.11047 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.07379 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00075 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	606.90322 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.07379 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00801 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00842 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	94.18314 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00170 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00034 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00006 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	23.28806 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.02527 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.05414 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00002 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	- (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	2,615.71869 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00002 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	40.28136 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	43.75333 (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	4,266.88722 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	883.45242 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	2,199.23262 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	1,214.07000 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	3,451.3435 (mg/s)
	mass flux in river at SW-002	M_r2 =	4,126.8271 (mg/s)
	mass flux in river at SW-003	M_r3 =	4,329.7773 (mg/s)
	mass flux in river at SW-004	M_r4 =	5,054.3242 (mg/s)
	mass flux in river at SW-004A	M_r4A =	7,754.0776 (mg/s)
	mass flux in river at SW-005	M_r5 =	12,020.9649 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	12,904.4173 (mg/s)
	mass flux into Colby Lake	M_cl =	16,317.7199 (mg/s)
	Low Flow		
	concentration in river at SW-001	C_r1 =	103.35220 (mg/L)
	concentration in river at SW-002	C_r2 =	94.73047 (mg/L)
	concentration in river at SW-003	C_r3 =	92.88024 (mg/L)
	concentration in river at SW-004	C_r4 =	86.46557 (mg/L)
	concentration in river at SW-004A	C_r4A =	78.00489 (mg/L)
	concentration in river at SW-005	C_r5 =	73.45712 (mg/L)
	concentration in river at USGS Gage	C_r6 =	72.92814 (mg/L)
	concentration in Colby Lake	C_cl =	104.69236 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Propsed Action

Case	Year 1		
Parameter	Potassium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	1.3000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	1.3000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	1.3000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	1.3000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	1.3000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	1.3000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	1.3000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	1.3000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	1.3000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	2.7000 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	1.7500 (mg/L)
	concentration of ground water into SW-002	C_g2 =	1.7500 (mg/L)
	concentration of ground water into SW-003	C_g3 =	1.7500 (mg/L)
	concentration of ground water into SW-004	C_g4 =	1.7500 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	1.7500 (mg/L)
	concentration of ground water into SW-005	C_g5 =	1.7500 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	1.7500 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	1.7500 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.1579 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	49.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	49.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	38.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	8.0808 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	2.2600 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	4.4500 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.1579 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	49.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_g3LOs =	49.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	38.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	8.0808 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	2.2600 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	2.2600 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	1.7500 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	1.7500 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	1.7500 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	24.5000 (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	8.91450 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	76.41000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	17.79730 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	5.34235 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00378 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00209 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00003 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	15.99037 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00209 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00041 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00106 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	4.89094 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00005 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00002 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00001 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	1.20935 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00067 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00143 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	- (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	68.91761 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	2.50702 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	2.27212 (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	112.42175 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	23.27675 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	57.94425 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	14.34810 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	85.3245 (mg/s)
	mass flux in river at SW-002	M_r2 =	103.1218 (mg/s)
	mass flux in river at SW-003	M_r3 =	108.4700 (mg/s)
	mass flux in river at SW-004	M_r4 =	130.5665 (mg/s)
	mass flux in river at SW-004A	M_r4A =	204.2632 (mg/s)
	mass flux in river at SW-005	M_r5 =	316.6850 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	339.9617 (mg/s)
	mass flux into Colby Lake	M_cl =	412.2541 (mg/s)
	Low Flow		
	concentration in river at SW-001	C_r1 =	2.55508 (mg/L)
	concentration in river at SW-002	C_r2 =	2.36714 (mg/L)
	concentration in river at SW-003	C_r3 =	2.32685 (mg/L)
	concentration in river at SW-004	C_r4 =	2.23363 (mg/L)
	concentration in river at SW-004A	C_r4A =	2.05486 (mg/L)
	concentration in river at SW-005	C_r5 =	1.93518 (mg/L)
	concentration in river at USGS Gage	C_r6 =	1.92126 (mg/L)
	concentration in Colby Lake	C_cl =	1.38285 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case	Year 1			
Parameter	Magnesium			
Input concentration data	concentration of surface water into SW-001	C_s1 =	8.0000	(mg/L)
	concentration of surface water into SW-002	C_s2 =	8.0000	(mg/L)
	concentration of surface water into SW-003	C_s3 =	8.0000	(mg/L)
	concentration of surface water into SW-004	C_s4 =	8.0000	(mg/L)
	concentration of surface water into SW-004A	C_s4A =	8.0000	(mg/L)
	concentration of surface water into SW-005	C_s5 =	8.0000	(mg/L)
	concentration of surface water into USGS Gage	C_s6 =	8.0000	(mg/L)
	concentration of surface water into Colby Lake	C_scl =	8.0000	(mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	8.0000	(mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	10.5000	(mg/L)
	concentration of West Pit overflow	C_sms =	#N/A	(mg/L)
	concentration of ground water into SW-001	C_g1 =	8.0200	(mg/L)
	concentration of ground water into SW-002	C_g2 =	8.0200	(mg/L)
	concentration of ground water into SW-003	C_g3 =	8.0200	(mg/L)
	concentration of ground water into SW-004	C_g4 =	8.0200	(mg/L)
	concentration of ground water into SW-004A	C_g4A =	8.0200	(mg/L)
	concentration of ground water into SW-005	C_g5 =	8.0200	(mg/L)
	concentration of ground water into USGS Gage	C_g6 =	8.0200	(mg/L)
	concentration of ground water into Colby Lake	C_gcl =	8.0200	(mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A	(mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A	(mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0469	(mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	75.9913	(mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	93.0000	(mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	117.5854	(mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	10.1298	(mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	4.8800	(mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	9.0100	(mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0469	(mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	75.9913	(mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	93.0000	(mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	117.5854	(mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	10.1298	(mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	4.8800	(mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	4.8800	(mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	8.0200	(mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	8.0200	(mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	8.0200	(mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	44.6000	(mg/L)
Convert concentration to mass flux	Low Flow			
	mass flux of surface water into SW-001	M_s1 =	-	(mg/s)
	mass flux of ground water into SW-001	M_g1 =	40.85388	(mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	297.15000	(mg/s)
	mass flux of surface water into SW-002	M_s2 =	-	(mg/s)
	mass flux of ground water into SW-002	M_g2 =	81.56247	(mg/s)
	mass flux of surface water into SW-003	M_s3 =	-	(mg/s)
	mass flux of ground water into SW-003	M_g3 =	24.48324	(mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A	(mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00586	(mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00397	(mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00004	(mg/s)
	mass flux of surface water into SW-004	M_s4 =	-	(mg/s)
	mass flux of ground water into SW-004	M_g4 =	73.28160	(mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A	(mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A	(mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	-	(mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00397	(mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00127	(mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00133	(mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	10.56098	(mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00009	(mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00005	(mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00001	(mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	2.61135	(mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00305	(mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00654	(mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000	(mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	-	(mg/s)
	mass flux of surface water into SW-004A	M_s4A =	-	(mg/s)
	mass flux of ground water into SW-004A	M_g4A =	315.83956	(mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A	(mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	-	(mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000	(mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	5.07601	(mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	4.90616	(mg/s)
	mass flux of surface water into SW-005	M_s5 =	-	(mg/s)
	mass flux of ground water into SW-005	M_g5 =	515.21282	(mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	-	(mg/s)
mass flux of ground water into USGS Gage	M_g6 =	106.67402	(mg/s)	
mass flux of surface water into Colby Lake	M_scl =	-	(mg/s)	
mass flux of ground water into Colby Lake	M_gcl =	265.55022	(mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M_shl =	88.29600	(mg/s)	
Mass balance at each node	Low Flow			
	mass flux in river at SW-001	M_r1 =	338.0039	(mg/s)
	mass flux in river at SW-002	M_r2 =	419.5663	(mg/s)
	mass flux in river at SW-003	M_r3 =	444.0595	(mg/s)
	mass flux in river at SW-004	M_r4 =	530.5297	(mg/s)
	mass flux in river at SW-004A	M_r4A =	856.3515	(mg/s)
	mass flux in river at SW-005	M_r5 =	1,371.5643	(mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	1,478.2383	(mg/s)
	mass flux into Colby Lake	M_cl =	1,832.0845	(mg/s)
	Low Flow			
	concentration in river at SW-001	C_r1 =	10.12169	(mg/L)
	concentration in river at SW-002	C_r2 =	9.63106	(mg/L)
	concentration in river at SW-003	C_r3 =	9.52574	(mg/L)
	concentration in river at SW-004	C_r4 =	9.07590	(mg/L)
	concentration in river at SW-004A	C_r4A =	8.61477	(mg/L)
	concentration in river at SW-005	C_r5 =	8.38129	(mg/L)
	concentration in river at USGS Gage	C_r6 =	8.35413	(mg/L)
	concentration in Colby Lake	C_cl =	8.04202	(mg/L)

Partridge River Mass-Balance Model - Mine Site - Propsed Action

Case	Year 1			
Parameter	Manganese			
Input concentration data	concentration of surface water into SW-001	C s1 =	0.1500 (mg/L)	
	concentration of surface water into SW-002	C s2 =	0.1500 (mg/L)	
	concentration of surface water into SW-003	C s3 =	0.1500 (mg/L)	
	concentration of surface water into SW-004	C s4 =	0.1500 (mg/L)	
	concentration of surface water into SW-004A	C s4A =	0.1500 (mg/L)	
	concentration of surface water into SW-005	C s5 =	0.1500 (mg/L)	
	concentration of surface water into USGS Gage	C s6 =	0.1500 (mg/L)	
	concentration of surface water into Colby Lake	C scl =	0.1500 (mg/L)	
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.1500 (mg/L)	
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0086 (mg/L)	
	concentration of West Pit overflow	C sms =	#N/A (mg/L)	
	concentration of ground water into SW-001	C g1 =	0.1240 (mg/L)	
	concentration of ground water into SW-002	C g2 =	0.1240 (mg/L)	
	concentration of ground water into SW-003	C g3 =	0.1240 (mg/L)	
	concentration of ground water into SW-004	C g4 =	0.1240 (mg/L)	
	concentration of ground water into SW-004A	C g4A =	0.1240 (mg/L)	
	concentration of ground water into SW-005	C g5 =	0.1240 (mg/L)	
	concentration of ground water into USGS Gage	C g6 =	0.1240 (mg/L)	
	concentration of ground water into Colby Lake	C gcl =	0.1240 (mg/L)	
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)	
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)	
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	0.0004 (mg/L)	
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	0.7500 (mg/L)	
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.7500 (mg/L)	
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	8.2535 (mg/L)	
	concentration of liner leakage from LOSP	C gC4LO =	0.7110 (mg/L)	
	concentration of seepage from Overburden (Storage)	C gOS =	0.1604 (mg/L)	
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	0.1160 (mg/L)	
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	0.0004 (mg/L)	
	concentration of liner leakage from Cat 3 sumps	C gC3s =	0.7500 (mg/L)	
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.7500 (mg/L)	
	concentration of liner leakage from Cat 4 sumps	C gC4s =	8.2535 (mg/L)	
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.7110 (mg/L)	
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.1604 (mg/L)	
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	0.1604 (mg/L)	
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.1240 (mg/L)	
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.1240 (mg/L)	
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.1240 (mg/L)	
	concentration of liner leakage from WWTF pond	C gWTFp =	0.8900 (mg/L)	
				Low Flow
	Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	- (mg/s)
		mass flux of ground water into SW-001	M g1 =	0.63166 (mg/s)
mass flux of surface discharges from upstream of PM-1		M sns =	0.24338 (mg/s)	
mass flux of surface water into SW-002		M s2 =	- (mg/s)	
mass flux of ground water into SW-002		M g2 =	1.26107 (mg/s)	
mass flux of surface water into SW-003		M s3 =	- (mg/s)	
mass flux of ground water into SW-003		M g3 =	0.37854 (mg/s)	
mass flux of seepage from East Pit to SW-003		M gep_003 =	#N/A (mg/s)	
mass flux of liner leakage from Cat 3 stockpile to SW-003		M gC3_003 =	0.00006 (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-003		M gC3LO_003 =	0.00003 (mg/s)	
mass flux of liner leakage from Cat 3 sumps to SW-003		M gC3s_003 =	0.00000 (mg/s)	
mass flux of surface water into SW-004		M s4 =	- (mg/s)	
mass flux of ground water into SW-004		M g4 =	1.13303 (mg/s)	
mass flux of seepage from East Pit to SW-004		M gep_004 =	#N/A (mg/s)	
mass flux of seepage from West Pit		M gwp =	#N/A (mg/s)	
mass flux of liner leakage from Cat 3 stockpile to SW-004		M gC3_004 =	- (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-004		M gC3LO_004 =	0.00003 (mg/s)	
mass flux of liner leakage from Cat 4 stockpile		M gC4 =	0.00009 (mg/s)	
mass flux of liner leakage from LOSP		M gC4LO =	0.00009 (mg/s)	
mass flux of seepage from Overburden (Storage)		M gOS =	0.34711 (mg/s)	
mass flux of liner leakage from Cat 3LO sumps to SW-004		M gC3LOs_004 =	0.00000 (mg/s)	
mass flux of liner leakage from Cat 4 sumps		M gC4s =	0.00000 (mg/s)	
mass flux of liner leakage from LOSP sumps		M gC4LOs =	0.00000 (mg/s)	
mass flux of seepage from Overburden Ponds - PW1		M gOp1 =	0.08583 (mg/s)	
mass flux of leakage from Haul Road Pond - PW2		M gHRp2 =	0.00005 (mg/s)	
mass flux of leakage from Haul Road Pond - PW4		M gHRp4 =	0.00010 (mg/s)	
mass flux of leakage from RTH Pond - PW3		M gRTHp =	0.00000 (mg/s)	
mass flux of liner leakage from WWTF pond		M gWTFp =	- (mg/s)	
mass flux of surface water into SW-004A		M s4A =	- (mg/s)	
mass flux of ground water into SW-004A		M g4A =	4.88330 (mg/s)	
mass flux of West Pit overflow		M sms =	#N/A (mg/s)	
mass flux of liner leakage from Cat 1/2 stockpile		M gC12 =	- (mg/s)	
mass flux of liner leakage from Cat 1/2 sumps		M gC12s =	0.00000 (mg/s)	
mass flux of seepage from Overburden (Cat 1/2)		M gO12 =	0.06535 (mg/s)	
mass flux of seepage from Overburden Pond - PW7		M gOp7 =	0.16125 (mg/s)	
mass flux of surface water into SW-005		M s5 =	- (mg/s)	
mass flux of ground water into SW-005		M g5 =	7.96588 (mg/s)	
mass flux of surface water into USGS Gage		M s6 =	- (mg/s)	
mass flux of ground water into USGS Gage		M g6 =	1.64932 (mg/s)	
mass flux of surface water into Colby Lake		M scl =	- (mg/s)	
mass flux of ground water into Colby Lake		M gcl =	4.10576 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP		M shl =	1.65555 (mg/s)	
				Low Flow
Mass balance at each node	mass flux in river at SW-001	M r1 =	0.8750 (mg/s)	
	mass flux in river at SW-002	M r2 =	2.1361 (mg/s)	
	mass flux in river at SW-003	M r3 =	2.5147 (mg/s)	
	mass flux in river at SW-004	M r4 =	4.0811 (mg/s)	
	mass flux in river at SW-004A	M r4A =	9.1910 (mg/s)	
	mass flux in river at SW-005	M r5 =	17.1569 (mg/s)	
	mass flux in river at USGS Gage	M r6 =	18.8062 (mg/s)	
	mass flux into Colby Lake	M cl =	24.5675 (mg/s)	
			Low Flow	
Convert mass flux to concentration	concentration in river at SW-001	C r1 =	0.02620 (mg/L)	
	concentration in river at SW-002	C r2 =	0.04903 (mg/L)	
	concentration in river at SW-003	C r3 =	0.05394 (mg/L)	
	concentration in river at SW-004	C r4 =	0.06982 (mg/L)	
	concentration in river at SW-004A	C r4A =	0.09246 (mg/L)	
	concentration in river at SW-005	C r5 =	0.10484 (mg/L)	
	concentration in river at USGS Gage	C r6 =	0.10628 (mg/L)	
	concentration in Colby Lake	C cl =	0.14430 (mg/L)	



Partridge River Mass-Balance Model - Mine Site - Propsed Action

Case	Year 1		
Parameter	Sodium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	2.5000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	2.5000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	2.5000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	2.5000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	2.5000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	2.5000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	2.5000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	2.5000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	2.5000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	4.8000 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	13.3300 (mg/L)
	concentration of ground water into SW-002	C_g2 =	13.3300 (mg/L)
	concentration of ground water into SW-003	C_g3 =	13.3300 (mg/L)
	concentration of ground water into SW-004	C_g4 =	13.3300 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	13.3300 (mg/L)
	concentration of ground water into SW-005	C_g5 =	13.3300 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	13.3300 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	13.3300 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.2627 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	251.7902 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	314.9047 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	44.4310 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	3.8277 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	4.6000 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	7.1900 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.2627 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	251.7902 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	314.9047 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	44.4310 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	3.8277 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	4.6000 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	4.6000 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	13.3300 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	13.3300 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	13.3300 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	97.0000 (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	67.90302 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	135.84000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	135.56455 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	40.69346 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.01943 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.01344 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00013 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	121.80096 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.01344 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00048 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00050 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	9.95502 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00031 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00002 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	2.46151 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00507 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.01087 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	- (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	524.95529 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	4.05067 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	4.62466 (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	856.33253 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	177.30233 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	441.36963 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	27.59250 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	203.7430 (mg/s)
	mass flux in river at SW-002	M_r2 =	339.3076 (mg/s)
	mass flux in river at SW-003	M_r3 =	380.0340 (mg/s)
	mass flux in river at SW-004	M_r4 =	514.2823 (mg/s)
	mass flux in river at SW-004A	M_r4A =	1,047.9130 (mg/s)
	mass flux in river at SW-005	M_r5 =	1,904.2455 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	2,081.5478 (mg/s)
	mass flux into Colby Lake	M_cl =	2,550.5100 (mg/s)
	Low Flow		
	concentration in river at SW-001	C_r1 =	6.10119 (mg/L)
	concentration in river at SW-002	C_r2 =	7.78874 (mg/L)
	concentration in river at SW-003	C_r3 =	8.15230 (mg/L)
	concentration in river at SW-004	C_r4 =	8.79795 (mg/L)
	concentration in river at SW-004A	C_r4A =	10.54185 (mg/L)
	concentration in river at SW-005	C_r5 =	11.63637 (mg/L)
	concentration in river at USGS Gage	C_r6 =	11.76368 (mg/L)
	concentration in Colby Lake	C_cl =	3.82486 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Propsed Action

Case	Year 1
Parameter	Nickel
Input concentration data	concentration of surface water into SW-001
	concentration of surface water into SW-002
	concentration of surface water into SW-003
	concentration of surface water into SW-004
	concentration of surface water into SW-004A
	concentration of surface water into SW-005
	concentration of surface water into USGS Gage
	concentration of surface water into Colby Lake
	concentration of surface water inflow from Hoyt Lakes WWTP
	concentration of surface water discharges from upstream of PM-1
	concentration of West Pit overflow
	concentration of ground water into SW-001
	concentration of ground water into SW-002
	concentration of ground water into SW-003
	concentration of ground water into SW-004
	concentration of ground water into SW-004A
	concentration of ground water into SW-005
	concentration of ground water into USGS Gage
	concentration of ground water into Colby Lake
	concentration of ground water seepage from East Pit
	concentration of ground water seepage from West Pit
	concentration of liner leakage from Cat 1/2 stockpile
	concentration of liner leakage from Cat 3 stockpile
	concentration of liner leakage from Cat 3LO stockpile
	concentration of liner leakage from Cat 4 stockpile
	concentration of liner leakage from LOSP
	concentration of seepage from Overburden (Storage)
	concentration of seepage from Overburden (Cat 1/2)
	concentration of liner leakage from Cat 1/2 sumps
	concentration of liner leakage from Cat 3 sumps
	concentration of liner leakage from Cat 3LO sumps
	concentration of liner leakage from Cat 4 sumps
	concentration of liner leakage from LOSP sumps
	concentration of seepage from Overburden Ponds - PW1
	concentration of seepage from Overburden Pond - PW7
	concentration of leakage from Haul Road Pond - PW2
	concentration of leakage from Haul Road Pond - PW4
	concentration of leakage from RTH Pond - PW3
	concentration of liner leakage from WWTF pond
Convert concentration to mass flux	mass flux of surface water into SW-001
	mass flux of surface water into SW-002
	mass flux of surface water into SW-003
	mass flux of surface water into SW-004
	mass flux of surface water into SW-004A
	mass flux of surface water into SW-005
	mass flux of surface water into USGS Gage
	mass flux of surface water into Colby Lake
	mass flux of surface water inflow from Hoyt Lakes WWTP
	mass flux of surface water discharges from upstream of PM-1
	mass flux of West Pit overflow
	mass flux of ground water into SW-001
	mass flux of ground water into SW-002
	mass flux of ground water into SW-003
	mass flux of ground water into SW-004
	mass flux of ground water into SW-004A
	mass flux of ground water into SW-005
	mass flux of ground water into USGS Gage
	mass flux of ground water into Colby Lake
	mass flux of ground water seepage from East Pit
	mass flux of ground water seepage from West Pit
	mass flux of liner leakage from Cat 1/2 stockpile
	mass flux of liner leakage from Cat 3 stockpile
	mass flux of liner leakage from Cat 3LO stockpile
	mass flux of liner leakage from Cat 4 stockpile
	mass flux of liner leakage from LOSP
	mass flux of seepage from Overburden (Storage)
	mass flux of seepage from Overburden (Cat 1/2)
	mass flux of seepage from Overburden Pond - PW7
	mass flux of seepage from Overburden Ponds - PW1
	mass flux of leakage from Haul Road Pond - PW2
	mass flux of leakage from Haul Road Pond - PW4
	mass flux of leakage from RTH Pond - PW3
	mass flux of liner leakage from WWTF pond
	mass flux of surface water into SW-004A
	mass flux of surface water into SW-004
	mass flux of West Pit overflow
	mass flux of liner leakage from Cat 1/2 stockpile
	mass flux of liner leakage from Cat 1/2 sumps
	mass flux of seepage from Overburden (Cat 1/2)
	mass flux of seepage from Overburden Pond - PW7
	mass flux of surface water into SW-005
	mass flux of ground water into SW-005
	mass flux of surface water into USGS Gage
	mass flux of ground water into USGS Gage
	mass flux of surface water into Colby Lake
	mass flux of ground water into Colby Lake
	mass flux of surface water from Hoyt Lakes WWTP
Mass balance at each node	mass flux in river at SW-001
	mass flux in river at SW-002
	mass flux in river at SW-003
	mass flux in river at SW-004
	mass flux in river at SW-004A
	mass flux in river at SW-005
	mass flux in river at USGS Gage
Convert mass flux to concentration	concentration in river at SW-001
	concentration in river at SW-002
	concentration in river at SW-003
	concentration in river at SW-004
	concentration in river at SW-004A
	concentration in river at SW-005
	concentration in river at USGS Gage

Partridge River Mass-Balance Model - Mine Site - Propsed Action

Case	Year 1
Parameter	Lead
Input concentration data	concentration of surface water into SW-001
	concentration of surface water into SW-002
	concentration of surface water into SW-003
	concentration of surface water into SW-004
	concentration of surface water into SW-004A
	concentration of surface water into SW-005
	concentration of surface water into USGS Gage
	concentration of surface water into Colby Lake
	concentration of surface water inflow from Hoyt Lakes WWTP
	concentration of surface water discharges from upstream of PM-1
	concentration of West Pit overflow
	concentration of ground water into SW-001
	concentration of ground water into SW-002
	concentration of ground water into SW-003
	concentration of ground water into SW-004
	concentration of ground water into SW-004A
	concentration of ground water into SW-005
	concentration of ground water into USGS Gage
	concentration of ground water into Colby Lake
	concentration of ground water seepage from East Pit
	concentration of ground water seepage from West Pit
	concentration of liner leakage from Cat 1/2 stockpile
	concentration of liner leakage from Cat 3 stockpile
	concentration of liner leakage from Cat 3LO stockpile
	concentration of liner leakage from Cat 4 stockpile
	concentration of liner leakage from LOSP
	concentration of seepage from Overburden (Storage)
	concentration of seepage from Overburden (Cat 1/2)
	concentration of liner leakage from Cat 1/2 sumps
	concentration of liner leakage from Cat 3 sumps
	concentration of liner leakage from Cat 3LO sumps
	concentration of liner leakage from Cat 4 sumps
	concentration of liner leakage from LOSP sumps
	concentration of seepage from Overburden Ponds - PW1
	concentration of seepage from Overburden Pond - PW7
	concentration of leakage from Haul Road Pond - PW2
	concentration of leakage from Haul Road Pond - PW4
	concentration of leakage from RTH Pond - PW3
	concentration of liner leakage from WWTF pond
Convert concentration to mass flux	Low Flow
	mass flux of surface water into SW-001
	mass flux of ground water into SW-001
	mass flux of surface discharges from upstream of PM-1
	mass flux of surface water into SW-002
	mass flux of ground water into SW-002
	mass flux of surface water into SW-003
	mass flux of ground water into SW-003
	mass flux of seepage from East Pit to SW-003
	mass flux of liner leakage from Cat 3 stockpile to SW-003
	mass flux of liner leakage from Cat 3LO stockpile to SW-003
	mass flux of liner leakage from Cat 3 sumps to SW-003
	mass flux of surface water into SW-004
	mass flux of ground water into SW-004
	mass flux of seepage from East Pit to SW-004
	mass flux of seepage from West Pit
	mass flux of liner leakage from Cat 3 stockpile to SW-004
	mass flux of liner leakage from Cat 3LO stockpile to SW-004
	mass flux of liner leakage from Cat 4 stockpile
	mass flux of liner leakage from LOSP
	mass flux of seepage from Overburden (Storage)
	mass flux of liner leakage from Cat 3LO sumps to SW-004
	mass flux of liner leakage from Cat 4 sumps
	mass flux of liner leakage from LOSP sumps
	mass flux of seepage from Overburden Ponds - PW1
	mass flux of leakage from Haul Road Pond - PW2
	mass flux of leakage from Haul Road Pond - PW4
	mass flux of leakage from RTH Pond - PW3
	mass flux of liner leakage from WWTF pond
	mass flux of surface water into SW-004A
	mass flux of ground water into SW-004A
	mass flux of West Pit overflow
	mass flux of liner leakage from Cat 1/2 stockpile
	mass flux of liner leakage from Cat 1/2 sumps
	mass flux of seepage from Overburden (Cat 1/2)
	mass flux of seepage from Overburden Pond - PW7
	mass flux of surface water into SW-005
	mass flux of ground water into SW-005
	mass flux of surface water into USGS Gage
	mass flux of ground water into USGS Gage
	mass flux of surface water into Colby Lake
	mass flux of ground water into Colby Lake
	mass flux of surface water from Hoyt Lakes WWTP
Mass balance at each node	Low Flow
	mass flux in river at SW-001
	mass flux in river at SW-002
	mass flux in river at SW-003
	mass flux in river at SW-004
	mass flux in river at SW-004A
	mass flux in river at SW-005
Convert mass flux to concentration	Low Flow
	concentration in river at SW-001
	concentration in river at SW-002
	concentration in river at SW-003
	concentration in river at SW-004
	concentration in river at SW-004A
	concentration in river at SW-005
	concentration in river at USGS Gage
	concentration in Colby Lake

Partridge River Mass-Balance Model - Mine Site - Propsed Action

Case	Year 1
Parameter	Antimony
Input concentration data	concentration of surface water into SW-001
	concentration of surface water into SW-002
	concentration of surface water into SW-003
	concentration of surface water into SW-004
	concentration of surface water into SW-004A
	concentration of surface water into SW-005
	concentration of surface water into USGS Gage
	concentration of surface water into Colby Lake
	concentration of surface water inflow from Hoyt Lakes WWTP
	concentration of surface water discharges from upstream of PM-1
	concentration of West Pit overflow
	concentration of ground water into SW-001
	concentration of ground water into SW-002
	concentration of ground water into SW-003
	concentration of ground water into SW-004
	concentration of ground water into SW-004A
	concentration of ground water into SW-005
	concentration of ground water into USGS Gage
	concentration of ground water into Colby Lake
	concentration of ground water seepage from East Pit
	concentration of ground water seepage from West Pit
	concentration of liner leakage from Cat 1/2 stockpile
	concentration of liner leakage from Cat 3 stockpile
	concentration of liner leakage from Cat 3LO stockpile
	concentration of liner leakage from Cat 4 stockpile
	concentration of liner leakage from LOSP
	concentration of seepage from Overburden (Storage)
	concentration of seepage from Overburden (Cat 1/2)
	concentration of liner leakage from Cat 1/2 sumps
	concentration of liner leakage from Cat 3 sumps
	concentration of liner leakage from Cat 3LO sumps
	concentration of liner leakage from Cat 4 sumps
	concentration of liner leakage from LOSP sumps
	concentration of seepage from Overburden Ponds - PW1
	concentration of seepage from Overburden Pond - PW7
	concentration of leakage from Haul Road Pond - PW2
	concentration of leakage from Haul Road Pond - PW4
	concentration of leakage from RTH Pond - PW3
	concentration of liner leakage from WWTF pond
Convert concentration to mass flux	Low Flow
	mass flux of surface water into SW-001
	mass flux of surface water into SW-002
	mass flux of surface water into SW-003
	mass flux of surface water into SW-004
	mass flux of surface water into SW-004A
	mass flux of surface water into SW-005
	mass flux of surface water into USGS Gage
	mass flux of surface water into Colby Lake
	mass flux of surface water inflow from Hoyt Lakes WWTP
	mass flux of surface water discharges from upstream of PM-1
	mass flux of West Pit overflow
	mass flux of ground water into SW-001
	mass flux of ground water into SW-002
	mass flux of ground water into SW-003
	mass flux of ground water into SW-004
	mass flux of ground water into SW-004A
	mass flux of ground water into SW-005
	mass flux of ground water into USGS Gage
	mass flux of ground water into Colby Lake
	mass flux of ground water seepage from East Pit to SW-003
	mass flux of liner leakage from Cat 3 stockpile to SW-003
	mass flux of liner leakage from Cat 3LO stockpile to SW-003
	mass flux of liner leakage from Cat 3 sumps to SW-003
	mass flux of surface water into SW-004
	mass flux of surface water into SW-004A
	mass flux of seepage from East Pit to SW-004
	mass flux of seepage from West Pit
	mass flux of liner leakage from Cat 3 stockpile to SW-004
	mass flux of liner leakage from Cat 3LO stockpile to SW-004
	mass flux of liner leakage from Cat 4 stockpile
	mass flux of liner leakage from LOSP
	mass flux of seepage from Overburden (Storage)
	mass flux of liner leakage from Cat 3LO sumps to SW-004
	mass flux of liner leakage from Cat 4 sumps
	mass flux of liner leakage from LOSP sumps
	mass flux of seepage from Overburden Ponds - PW1
	mass flux of leakage from Haul Road Pond - PW2
	mass flux of leakage from Haul Road Pond - PW4
	mass flux of leakage from RTH Pond - PW3
	mass flux of liner leakage from WWTF pond
	mass flux of surface water into SW-004A
	mass flux of ground water into SW-004A
	mass flux of West Pit overflow
	mass flux of liner leakage from Cat 1/2 stockpile
	mass flux of liner leakage from Cat 1/2 sumps
	mass flux of seepage from Overburden (Cat 1/2)
	mass flux of seepage from Overburden Pond - PW7
	mass flux of surface water into SW-005
	mass flux of ground water into SW-005
	mass flux of surface water into USGS Gage
	mass flux of ground water into USGS Gage
	mass flux of ground water into Colby Lake
	mass flux of ground water into Colby Lake
	mass flux of surface water from Hoyt Lakes WWTP
Mass balance at each node	Low Flow
	mass flux in river at SW-001
	mass flux in river at SW-002
	mass flux in river at SW-003
	mass flux in river at SW-004
	mass flux in river at SW-004A
	mass flux in river at SW-005
Convert mass flux to concentration	Low Flow
	concentration in river at SW-001
	concentration in river at SW-002
	concentration in river at SW-003
	concentration in river at SW-004
	concentration in river at SW-004A
	concentration in river at SW-005
	concentration in river at USGS Gage
	concentration in Colby Lake

Partridge River Mass-Balance Model - Mine Site - Propsed Action

Case	Year 1		
Parameter	Selenium		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0005 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0005 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0005 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0005 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0005 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0005 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0005 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0005 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0005 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0005 (mg/L)
	concentration of West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0019 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0019 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0019 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0019 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0019 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0019 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0019 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0019 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	0.0000 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	0.0029 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0029 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0029 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.0029 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0004 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	0.0019 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	0.0000 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C gC3s =	0.0029 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.0029 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0029 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0029 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0004 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	0.0004 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0019 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0019 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0019 (mg/L)
	concentration of liner leakage from WWTF pond	C gWTFp =	0.0074 (mg/L)
			Low Flow
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	(mg/s)
	mass flux of ground water into SW-001	M g1 =	0.00973 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.01415 (mg/s)
	mass flux of surface water into SW-002	M s2 =	(mg/s)
	mass flux of ground water into SW-002	M g2 =	0.01942 (mg/s)
	mass flux of surface water into SW-003	M s3 =	(mg/s)
	mass flux of ground water into SW-003	M g3 =	0.00583 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	(mg/s)
	mass flux of ground water into SW-004	M g4 =	0.01745 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M gC3_004 =	(mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.00096 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.00024 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	(mg/s)
	mass flux of surface water into SW-004A	M s4A =	(mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.07522 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M gC12 =	(mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M gO12 =	0.00107 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	0.00045 (mg/s)
	mass flux of surface water into SW-005	M s5 =	(mg/s)
	mass flux of ground water into SW-005	M g5 =	0.12270 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	(mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.02540 (mg/s)
mass flux of surface water into Colby Lake	M scl =	(mg/s)	
mass flux of ground water into Colby Lake	M gcl =	0.06324 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.00552 (mg/s)	
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M r1 =	0.0239 (mg/s)
	mass flux in river at SW-002	M r2 =	0.0433 (mg/s)
	mass flux in river at SW-003	M r3 =	0.0491 (mg/s)
	mass flux in river at SW-004	M r4 =	0.0678 (mg/s)
	mass flux in river at SW-004A	M r4A =	0.1445 (mg/s)
	mass flux in river at SW-005	M r5 =	0.2672 (mg/s)
	mass flux in river at USGS Gage	M r6 =	0.2926 (mg/s)
mass flux into Colby Lake	M cl =	0.3614 (mg/s)	
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C r1 =	0.00072 (mg/L)
	concentration in river at SW-002	C r2 =	0.00099 (mg/L)
	concentration in river at SW-003	C r3 =	0.00105 (mg/L)
	concentration in river at SW-004	C r4 =	0.00116 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00145 (mg/L)
	concentration in river at SW-005	C r5 =	0.00163 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00165 (mg/L)
	concentration in Colby Lake	C cl =	0.00067 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Propsed Action

Case	Year 1
Parameter	sulfate
Input concentration data	concentration of surface water into SW-001
	concentration of surface water into SW-002
	concentration of surface water into SW-003
	concentration of surface water into SW-004
	concentration of surface water into SW-004A
	concentration of surface water into SW-005
	concentration of surface water into USGS Gage
	concentration of surface water into Colby Lake
	concentration of surface water inflow from Hoyt Lakes WWTP
	concentration of surface water discharges from upstream of PM-1
	concentration of West Pit overflow
	concentration of ground water into SW-001
	concentration of ground water into SW-002
	concentration of ground water into SW-003
	concentration of ground water into SW-004
	concentration of ground water into SW-004A
	concentration of ground water into SW-005
	concentration of ground water into USGS Gage
	concentration of ground water into Colby Lake
	concentration of ground water seepage from East Pit
	concentration of ground water seepage from West Pit
	concentration of liner leakage from Cat 1/2 stockpile
	concentration of liner leakage from Cat 3 stockpile
	concentration of liner leakage from Cat 3LO stockpile
	concentration of liner leakage from Cat 4 stockpile
	concentration of liner leakage from LOSP
	concentration of seepage from Overburden (Storage)
	concentration of seepage from Overburden (Cat 1/2)
	concentration of liner leakage from Cat 1/2 sumps
	concentration of liner leakage from Cat 3 sumps
	concentration of liner leakage from Cat 3LO sumps
	concentration of liner leakage from Cat 4 sumps
	concentration of liner leakage from LOSP sumps
	concentration of seepage from Overburden Ponds - PW1
	concentration of seepage from Overburden Pond - PW7
	concentration of leakage from Haul Road Pond - PW2
	concentration of leakage from Haul Road Pond - PW4
	concentration of leakage from RTH Pond - PW3
	concentration of liner leakage from WWTF pond
Convert concentration to mass flux	Low Flow
	mass flux of surface water into SW-001
	mass flux of surface water into SW-002
	mass flux of surface water into SW-003
	mass flux of surface water into SW-004
	mass flux of surface water into SW-004A
	mass flux of surface water into SW-005
	mass flux of surface water into USGS Gage
	mass flux of surface water into Colby Lake
	mass flux of surface water inflow from Hoyt Lakes WWTP
	mass flux of surface water discharges from upstream of PM-1
	mass flux of West Pit overflow
	mass flux of ground water into SW-001
	mass flux of ground water into SW-002
	mass flux of ground water into SW-003
	mass flux of ground water into SW-004
	mass flux of ground water into SW-004A
	mass flux of ground water into SW-005
	mass flux of ground water into USGS Gage
	mass flux of ground water into Colby Lake
	mass flux of ground water seepage from East Pit
	mass flux of ground water seepage from West Pit
	mass flux of liner leakage from Cat 1/2 stockpile
	mass flux of liner leakage from Cat 3 stockpile
	mass flux of liner leakage from Cat 3LO stockpile
	mass flux of liner leakage from Cat 4 stockpile
	mass flux of liner leakage from LOSP
	mass flux of seepage from Overburden (Storage)
	mass flux of seepage from Overburden (Cat 1/2)
	mass flux of seepage from Overburden Pond - PW7
	mass flux of seepage from Overburden Ponds - PW1
	mass flux of leakage from Haul Road Pond - PW2
	mass flux of leakage from Haul Road Pond - PW4
	mass flux of leakage from RTH Pond - PW3
	mass flux of liner leakage from WWTF pond
	mass flux of surface water into SW-001
	mass flux of surface water into SW-002
	mass flux of surface water into SW-003
	mass flux of surface water into SW-004
	mass flux of surface water into SW-004A
	mass flux of surface water into SW-005
	mass flux of surface water into USGS Gage
	mass flux of surface water into Colby Lake
	mass flux of surface water inflow from Hoyt Lakes WWTP
Mass balance at each node	Low Flow
	mass flux in river at SW-001
	mass flux in river at SW-002
	mass flux in river at SW-003
	mass flux in river at SW-004
	mass flux in river at SW-004A
	mass flux in river at SW-005
Convert mass flux to concentration	Low Flow
	concentration in river at SW-001
	concentration in river at SW-002
	concentration in river at SW-003
	concentration in river at SW-004
	concentration in river at SW-004A
	concentration in river at SW-005
	concentration in river at USGS Gage
	concentration in Colby Lake



Partridge River Mass-Balance Model - Mine Site - Propsed Action

Case	Year 1		
Parameter	Thallium		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0004 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0004 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0004 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0004 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0004 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0004 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0004 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0004 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0004 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0003 (mg/L)
	concentration of West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0000 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0000 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0000 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0000 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0000 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0000 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0000 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0000 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	0.0000 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	0.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0001 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.0001 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0000 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	0.0000 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C gC3s =	0.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0001 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0001 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0000 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	0.0000 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0000 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0000 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0000 (mg/L)
	concentration of liner leakage from WWTF pond	C gWTFp =	0.0044 (mg/L)
			Low Flow
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	(mg/s)
	mass flux of ground water into SW-001	M g1 =	0.00002 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.00809 (mg/s)
	mass flux of surface water into SW-002	M s2 =	(mg/s)
	mass flux of ground water into SW-002	M g2 =	0.00004 (mg/s)
	mass flux of surface water into SW-003	M s3 =	(mg/s)
	mass flux of ground water into SW-003	M g3 =	0.00001 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	(mg/s)
	mass flux of ground water into SW-004	M g4 =	0.00004 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M gC3_004 =	(mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.00009 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.00002 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	(mg/s)
	mass flux of surface water into SW-004A	M s4A =	(mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.00016 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M gC12 =	(mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M gO12 =	(mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	0.00004 (mg/s)
	mass flux of surface water into SW-005	M s5 =	(mg/s)
	mass flux of ground water into SW-005	M g5 =	0.00026 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	(mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.00005 (mg/s)
mass flux of surface water into Colby Lake	M scl =	(mg/s)	
mass flux of ground water into Colby Lake	M gcl =	0.00013 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.00441 (mg/s)	
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M r1 =	0.0081 (mg/s)
	mass flux in river at SW-002	M r2 =	0.0082 (mg/s)
	mass flux in river at SW-003	M r3 =	0.0082 (mg/s)
	mass flux in river at SW-004	M r4 =	0.0083 (mg/s)
	mass flux in river at SW-004A	M r4A =	0.0085 (mg/s)
	mass flux in river at SW-005	M r5 =	0.0088 (mg/s)
	mass flux in river at USGS Gage	M r6 =	0.0088 (mg/s)
mass flux into Colby Lake	M cl =	0.0134 (mg/s)	
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C r1 =	0.00024 (mg/L)
	concentration in river at SW-002	C r2 =	0.00019 (mg/L)
	concentration in river at SW-003	C r3 =	0.00018 (mg/L)
	concentration in river at SW-004	C r4 =	0.00014 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00009 (mg/L)
	concentration in river at SW-005	C r5 =	0.00005 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00005 (mg/L)
	concentration in Colby Lake	C cl =	0.00035 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Propsed Action

Case	Year 1		
Parameter	Vanadium		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0009 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0009 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0009 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0009 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0009 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0009 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0009 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0009 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0009 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0043 (mg/L)
	concentration of West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0043 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0043 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0043 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0043 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0043 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0043 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0043 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0043 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	0.0004 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	0.1607 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.2010 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0091 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.0008 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0017 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	0.0014 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	0.0004 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C gC3s =	0.1607 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.2010 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0091 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0008 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0017 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	0.0017 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0043 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0043 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0043 (mg/L)
	concentration of liner leakage from WWTF pond	C gWTFp =	0.0630 (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M s1 =	- (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.02190 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.12169 (mg/s)
	mass flux of surface water into SW-002	M s2 =	- (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.04373 (mg/s)
	mass flux of surface water into SW-003	M s3 =	- (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.01313 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M gC3_003 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	- (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.03929 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.00374 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.00093 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	- (mg/s)
	mass flux of surface water into SW-004A	M s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.16934 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M gO12 =	0.00079 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	0.00174 (mg/s)
	mass flux of surface water into SW-005	M s5 =	- (mg/s)
	mass flux of ground water into SW-005	M g5 =	0.27624 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.05719 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	0.14238 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.00993 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M r1 =	0.1436 (mg/s)
	mass flux in river at SW-002	M r2 =	0.1873 (mg/s)
	mass flux in river at SW-003	M r3 =	0.2005 (mg/s)
	mass flux in river at SW-004	M r4 =	0.2444 (mg/s)
	mass flux in river at SW-004A	M r4A =	0.4163 (mg/s)
	mass flux in river at SW-005	M r5 =	0.6926 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M r6 =	0.7497 (mg/s)
	mass flux into Colby Lake	M cl =	0.9021 (mg/s)
	Low Flow		
	concentration in river at SW-001	C r1 =	0.00430 (mg/L)
	concentration in river at SW-002	C r2 =	0.00430 (mg/L)
	concentration in river at SW-003	C r3 =	0.00430 (mg/L)
	concentration in river at SW-004	C r4 =	0.00418 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00419 (mg/L)
	concentration in river at SW-005	C r5 =	0.00423 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00424 (mg/L)
	concentration in Colby Lake	C cl =	0.00137 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Propsed Action

Case	Year 1		
Parameter	Zinc		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0160 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0160 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0160 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0160 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0160 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0160 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0160 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0160 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0620 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0073 (mg/L)
	concentration of West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0275 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0275 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0275 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0275 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0275 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0275 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0275 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0275 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	0.0004 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	0.0900 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0900 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	26.0000 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	4.0784 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0046 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	0.0030 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	0.0004 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C gC3s =	0.0900 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.0900 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	26.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	4.0784 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0046 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	0.0046 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0275 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0275 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0275 (mg/L)
	concentration of liner leakage from WWTF pond	C gWTFp =	2.2100 (mg/L)
			Low Flow
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	- (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.14009 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.20744 (mg/s)
	mass flux of surface water into SW-002	M s2 =	- (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.27967 (mg/s)
	mass flux of surface water into SW-003	M s3 =	- (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.08395 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M gC3_003 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	- (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.25128 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00028 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00054 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.00987 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00001 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.00244 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00001 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00002 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	- (mg/s)
	mass flux of surface water into SW-004A	M s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M g4A =	1.08299 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M gO12 =	0.00169 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	0.00458 (mg/s)
	mass flux of surface water into SW-005	M s5 =	- (mg/s)
	mass flux of ground water into SW-005	M g5 =	1.76663 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.36578 (mg/s)
mass flux of surface water into Colby Lake	M scl =	- (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	0.91055 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.68429 (mg/s)	
			Low Flow
Mass balance at each node	mass flux in river at SW-001	M r1 =	0.3475 (mg/s)
	mass flux in river at SW-002	M r2 =	0.6272 (mg/s)
	mass flux in river at SW-003	M r3 =	0.7112 (mg/s)
	mass flux in river at SW-004	M r4 =	0.9756 (mg/s)
	mass flux in river at SW-004A	M r4A =	2.0649 (mg/s)
	mass flux in river at SW-005	M r5 =	3.8315 (mg/s)
	mass flux in river at USGS Gage	M r6 =	4.1973 (mg/s)
mass flux into Colby Lake	M cl =	5.7921 (mg/s)	
			Low Flow
Convert mass flux to concentration	concentration in river at SW-001	C r1 =	0.01041 (mg/L)
	concentration in river at SW-002	C r2 =	0.01440 (mg/L)
	concentration in river at SW-003	C r3 =	0.01526 (mg/L)
	concentration in river at SW-004	C r4 =	0.01669 (mg/L)
	concentration in river at SW-004A	C r4A =	0.02077 (mg/L)
	concentration in river at SW-005	C r5 =	0.02341 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.02372 (mg/L)
	concentration in Colby Lake	C cl =	0.01749 (mg/L)

# **Partridge River Mass-Balance Model--Mine Site-Proposed Action - Proposed Action For Average Liner Leakage & Average Chemistry from Stockpiles**

## **FLOWS**

Case Flow	Year 1 Average Flow Conditions			
Total flow in Partridge River	flow in river at SW-001	Q_r1_M =	5.70	(cfs)
	flow in river at SW-002	Q_r2_M =	11.35	(cfs)
	flow in river at SW-003	Q_r3_M =	13.08	(cfs)
	flow in river at SW-004	Q_r4_M =	19.44	(cfs)
	flow in river at SW-004A	Q_r4a_M =	44.78	(cfs)
	flow in river at SW-005	Q_r5_M =	83.18	(cfs)
	flow in river at USGS Gage	Q_r6_M =	87.53	(cfs)
	total flow into Colby Lake	Q_cl_M =	112.65	(cfs)
	flow check	Q_ck_M =	112.65	(cfs)
input flow data	surface water flow into SW-001	Q_s1_M =	4.52	(cfs)
	surface water flow into SW-002	Q_s2_M =	5.29	(cfs)
	surface water flow into SW-003	Q_s3_M =	1.62	(cfs)
	surface water flow into SW-004	Q_s4_M =	5.95	(cfs)
	surface water flow into SW-004A	Q_s4a_M =	23.89	(cfs)
	surface water flow into SW-005	Q_s5_M =	36.13	(cfs)
	surface water flow into USGS Gage	Q_s6_M =	3.88	(cfs)
	surface water flow into Colby Lake	Q_scl_M =	23.56	(cfs)
	surface water inflow from Hoyt Lakes WWTP	Q_shl_M =	0.39	(cfs)
	surface water inflow from discharges upstream of PM-1	Q_sns_M =	1.00	(cfs)
	surface water flow from West Pit overflow	Q_sms_M =	-	(cfs)
	ground water flow into SW-001	Q_g1_M =	0.18	(cfs)
	ground water flow into SW-002	Q_g2_M =	0.36	(cfs)
	ground water flow into SW-003	Q_g3_M =	0.11	(cfs)
	ground water flow into SW-004	Q_g4_M =	0.32	(cfs)
	ground water flow into SW-004A	Q_g4a_M =	1.39	(cfs)
	ground water flow into SW-005	Q_g5_M =	2.27	(cfs)
	ground water flow into USGS Gage	Q_g6_M =	0.47	(cfs)
	ground water flow into Colby Lake	Q_gcl_M =	1.17	(cfs)
	ground water seepage from East Pit to SW-003	Q_gep_003_M =	-	(cfs)
	ground water seepage from East Pit to SW-004	Q_gep_004_M =	-	(cfs)
	ground water seepage from West Pit	Q_gwp_M =	-	(cfs)
	ground water liner leakage from Cat 1/2 stockpile	Q_gC12_M =	-	(cfs)
	ground water liner leakage from Cat 3 stockpile to SW-003	Q_gC3_003_M =	0.0000	(cfs)
	ground water liner leakage from Cat 3 stockpile to SW-004	Q_gC3_004_M =	-	(cfs)
	ground water liner leakage from Cat 3LO stockpile to SW-003	Q_gC3LO_003_M =	0.0000	(cfs)
	ground water liner leakage from Cat 3LO stockpile to SW-004	Q_gC3LO_004_M =	0.0000	(cfs)
	ground water liner leakage from Cat 4 stockpile	Q_gC4_M =	0.0000	(cfs)
	ground water liner leakage from LO SP	Q_gC4LO_M =	0.0000	(cfs)
	ground water seepage from Overburden Storage	Q_gOS_M =	0.0765	(cfs)
	ground water seepage from Overburden (Cat 1/2)	Q_gO12_M =	0.0228	(cfs)
	ground water liner leakage from Cat 1/2 sumps	Q_gC12s_M =	0.0000	(cfs)
	ground water liner leakage from Cat 3 sumps	Q_gC3s_M =	0.0000	(cfs)
	ground water liner leakage from Cat 3LO sumps	Q_gC3LOs_M =	0.0000	(cfs)
	ground water liner leakage from Cat 4 sumps	Q_gC4s_M =	0.0000	(cfs)
	ground water liner leakage from LO SP sumps	Q_gC4LOs_M =	0.0000	(cfs)
	ground water seepage from Overburden pond - PW1	Q_gOp1_M =	0.0189	(cfs)
	ground water seepage from Overburden pond - PW7	Q_gOp7_M =	0.0355	(cfs)
	ground water leakage from Haul Road pond - PW2	Q_gHRp2_M =	0.0000	(cfs)
	ground water leakage from Haul Road pond - PW4	Q_gHRp4_M =	0.0000	(cfs)
	ground water leakage from RTH pond - PW3	Q_gRTHp_M =	0.0000	(cfs)
	ground water liner leakage from WWTF pond	Q_gWTFp_M =	-	(cfs)

Partridge River Mass-Balance Model--Mine Site-Proposed Action - Proposed Action

Case	Year 1		
Parameter	Silver		
	Year 1		
Input concentration data	Average Flow Conditions	C s1 =	0.0001 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0001 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0001 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0001 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0001 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0001 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0001 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0001 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0001 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0001 (mg/L)
	concentration of West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0006 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0006 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0006 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0006 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0006 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0006 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0006 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0006 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	0.0000 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	0.0007 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0007 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0007 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.0001 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	- (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	0.0000 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C gC3s =	0.0007 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.0007 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0007 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0001 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	- (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	- (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0006 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0006 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0006 (mg/L)
	concentration of liner leakage from WWTF pond	C gWTFp =	0.0027 (mg/L)

		Average Flow
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 = 0.01279 (mg/s)
	mass flux of ground water into SW-001	M q1 = 0.00280 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns = 0.00340 (mg/s)
	mass flux of surface water into SW-002	M s2 = 0.01497 (mg/s)
	mass flux of ground water into SW-002	M q2 = 0.00559 (mg/s)
	mass flux of surface water into SW-003	M s3 = 0.00457 (mg/s)
	mass flux of ground water into SW-003	M q3 = 0.00168 (mg/s)
	mass flux of seepage from East Pit to SW-003	M qep 003 = #N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M qC3 003 = 0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M qC3LO 003 = 0.00000 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M qC3s 003 = 0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 = 0.01684 (mg/s)
	mass flux of ground water into SW-004	M q4 = 0.00503 (mg/s)
	mass flux of seepage from East Pit to SW-004	M qep 004 = #N/A (mg/s)
	mass flux of seepage from West Pit	M qwp = #N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M qC3 004 = - (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M qC3LO 004 = 0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M qC4 = 0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M qC4LO = 0.00000 (mg/s)
	mass flux of seepage from Overburden (Storage)	M qOS = - (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M qC3LOs 004 = 0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M qC4s = 0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M qC4LOs = 0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 = - (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 = 0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 = 0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp = 0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp = - (mg/s)
	mass flux of surface water into SW-004A	M s4A = 0.06760 (mg/s)
	mass flux of ground water into SW-004A	M q4A = 0.02166 (mg/s)
	mass flux of West Pit overflow	M sms = #N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M qC12 = - (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M qC12s = 0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M gO12 = - (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 = - (mg/s)
	mass flux of surface water into SW-005	M s5 = 0.10224 (mg/s)
	mass flux of ground water into SW-005	M q5 = 0.03533 (mg/s)
	mass flux of surface water into USGS Gage	M s6 = 0.01098 (mg/s)
	mass flux of ground water into USGS Gage	M q6 = 0.00732 (mg/s)
	mass flux of surface water into Colby Lake	M scl = 0.06667 (mg/s)
	mass flux of ground water into Colby Lake	M qcl = 0.01821 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl = 0.00110 (mg/s)

		Average Flow
Mass balance at each node	mass flux in river at SW-001	M r1 = 0.0190 (mg/s)
	mass flux in river at SW-002	M r2 = 0.0396 (mg/s)
	mass flux in river at SW-003	M r3 = 0.0458 (mg/s)
	mass flux in river at SW-004	M r4 = 0.0677 (mg/s)
	mass flux in river at SW-004A	M r4A = 0.1569 (mg/s)
	mass flux in river at SW-005	M r5 = 0.2945 (mg/s)
	mass flux in river at USGS Gage	M r6 = 0.3128 (mg/s)
mass flux into Colby Lake	M cl = 0.3988 (mg/s)	

		Average Flow
Convert mass flux to concentration	concentration in river at SW-001	C r1 = 0.00012 (mg/L)
	concentration in river at SW-002	C r2 = 0.00012 (mg/L)
	concentration in river at SW-003	C r3 = 0.00012 (mg/L)
	concentration in river at SW-004	C r4 = 0.00012 (mg/L)
	concentration in river at SW-004A	C r4A = 0.00012 (mg/L)
	concentration in river at SW-005	C r5 = 0.00013 (mg/L)
	concentration in river at USGS Gage	C r6 = 0.00013 (mg/L)
concentration in Colby Lake	C cl = 0.00013 (mg/L)	

Partridge River Mass-Balance Model--Mine Site-Proposed Action - Proposed Action

Case	Year 1		
Parameter	Aluminum		
Year 1			
Input concentration data	Average Flow Conditions	C_s1 =	0.0700 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0700 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0700 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0700 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0700 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0700 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0700 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0700 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0700 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0173 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.1250 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.1250 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.1250 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.1250 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.1250 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.1250 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.1250 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.1250 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0106 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	1.6800 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	1.6800 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	26.9593 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	2.3225 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.4106 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.1400 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0106 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	1.6800 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	1.6800 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	26.9593 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	2.3225 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.4106 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	0.4106 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.1250 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.1250 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.1250 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	2.5500 (mg/L)
Average Flow			
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	8.95493 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.63675 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.48959 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	10.48170 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	1.27124 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	3.20178 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.38160 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00021 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00012 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	11.78945 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	1.14217 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00012 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00048 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00050 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.88859 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00001 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.21972 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00005 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00010 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	- (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	47.31716 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	4.92269 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.09031 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	0.41280 (mg/s)
	mass flux of surface water into SW-005	M_s5 =	71.56589 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	8.03013 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	7.68573 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	1.66263 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	46.67236 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	4.13888 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.77259 (mg/s)
Average Flow			
Mass balance at each node	mass flux in river at SW-001	M_r1 =	10.0813 (mg/s)
	mass flux in river at SW-002	M_r2 =	21.8342 (mg/s)
	mass flux in river at SW-003	M_r3 =	25.4179 (mg/s)
	mass flux in river at SW-004	M_r4 =	39.4501 (mg/s)
	mass flux in river at SW-004A	M_r4A =	92.2021 (mg/s)
	mass flux in river at SW-005	M_r5 =	171.7961 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	181.1464 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	232.7303 (mg/s)
	concentration in river at SW-001	C_r1 =	0.06249 (mg/L)
	concentration in river at SW-002	C_r2 =	0.06797 (mg/L)
	concentration in river at SW-003	C_r3 =	0.06869 (mg/L)
	concentration in river at SW-004	C_r4 =	0.07171 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.07276 (mg/L)
	concentration in river at SW-005	C_r5 =	0.07298 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.07313 (mg/L)
	concentration in Colby Lake	C_cl =	0.07300 (mg/L)

Partridge River Mass-Balance Model--Mine Site-Proposed Action - Proposed Action

Case	Year 1			
Parameter	Arsenic			
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0021 (mg/L)	
	concentration of surface water into SW-002	C_s2 =	0.0021 (mg/L)	
	concentration of surface water into SW-003	C_s3 =	0.0021 (mg/L)	
	concentration of surface water into SW-004	C_s4 =	0.0021 (mg/L)	
	concentration of surface water into SW-004A	C_s4A =	0.0021 (mg/L)	
	concentration of surface water into SW-005	C_s5 =	0.0021 (mg/L)	
	concentration of surface water into USGS Gage	C_s6 =	0.0021 (mg/L)	
	concentration of surface water into Colby Lake	C_scl =	0.0021 (mg/L)	
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0021 (mg/L)	
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0065 (mg/L)	
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)	
	concentration of ground water into SW-001	C_g1 =	0.0022 (mg/L)	
	concentration of ground water into SW-002	C_g2 =	0.0022 (mg/L)	
	concentration of ground water into SW-003	C_g3 =	0.0022 (mg/L)	
	concentration of ground water into SW-004	C_g4 =	0.0022 (mg/L)	
	concentration of ground water into SW-004A	C_g4A =	0.0022 (mg/L)	
	concentration of ground water into SW-005	C_g5 =	0.0022 (mg/L)	
	concentration of ground water into USGS Gage	C_g6 =	0.0022 (mg/L)	
	concentration of ground water into Colby Lake	C_gcl =	0.0022 (mg/L)	
	concentration of ground water seepage from East Pit	C_ggp =	#N/A (mg/L)	
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)	
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0006 (mg/L)	
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.3961 (mg/L)	
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.4954 (mg/L)	
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0294 (mg/L)	
	concentration of liner leakage from LOSP	C_gC4LO =	0.0025 (mg/L)	
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0016 (mg/L)	
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0027 (mg/L)	
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0006 (mg/L)	
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.3961 (mg/L)	
	concentration of liner leakage from Cat 3LO sumps	C_g3LOs =	0.4954 (mg/L)	
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0294 (mg/L)	
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0025 (mg/L)	
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0016 (mg/L)	
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	0.0016 (mg/L)	
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0022 (mg/L)	
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0022 (mg/L)	
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0022 (mg/L)	
	concentration of liner leakage from WWTF ponc	C_gWTFp =	0.2200 (mg/L)	
			Average Flow	
	Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	0.26993 (mg/s)
mass flux of ground water into SW-001		M_g1 =	0.01100 (mg/s)	
mass flux of surface discharges from upstream of PM-1		M_sns =	0.18395 (mg/s)	
mass flux of surface water into SW-002		M_s2 =	0.31595 (mg/s)	
mass flux of ground water into SW-002		M_g2 =	0.02197 (mg/s)	
mass flux of surface water into SW-003		M_s3 =	0.09651 (mg/s)	
mass flux of ground water into SW-003		M_g3 =	0.00659 (mg/s)	
mass flux of seepage from East Pit to SW-003		M_gep_003 =	#N/A (mg/s)	
mass flux of liner leakage from Cat 3 stockpile to SW-003		M_gC3_003 =	0.00005 (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-003		M_gC3LO_003 =	0.00003 (mg/s)	
mass flux of liner leakage from Cat 3 sumps to SW-003		M_gC3s_003 =	0.00000 (mg/s)	
mass flux of surface water into SW-004		M_s4 =	0.35537 (mg/s)	
mass flux of ground water into SW-004		M_g4 =	0.01974 (mg/s)	
mass flux of seepage from East Pit to SW-004		M_gep_004 =	#N/A (mg/s)	
mass flux of seepage from West Pit		M_gwp =	#N/A (mg/s)	
mass flux of liner leakage from Cat 3 stockpile to SW-004		M_gC3_004 =	- (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-004		M_gC3LO_004 =	0.00003 (mg/s)	
mass flux of liner leakage from Cat 4 stockpile		M_gC4 =	0.00000 (mg/s)	
mass flux of liner leakage from LOSP		M_gC4LO =	0.00000 (mg/s)	
mass flux of seepage from Overburden (Storage)		M_gOS =	0.00338 (mg/s)	
mass flux of liner leakage from Cat 3LO sumps to SW-004		M_gC3LOs_004 =	0.00000 (mg/s)	
mass flux of liner leakage from Cat 4 sumps		M_gC4s =	0.00000 (mg/s)	
mass flux of liner leakage from LOSP sumps		M_gC4LOs =	0.00000 (mg/s)	
mass flux of seepage from Overburden Ponds - PW1		M_gOp1 =	0.00083 (mg/s)	
mass flux of leakage from Haul Road Pond - PW2		M_gHRp2 =	0.00000 (mg/s)	
mass flux of leakage from Haul Road Pond - PW4		M_gHRp4 =	0.00000 (mg/s)	
mass flux of leakage from RTH Pond - PW3		M_gRTHp =	0.00000 (mg/s)	
mass flux of liner leakage from WWTF pond		M_gWTFp =	- (mg/s)	
mass flux of surface water into SW-004A		M_s4A =	1.42627 (mg/s)	
mass flux of ground water into SW-004A		M_g4A =	0.08506 (mg/s)	
mass flux of West Pit overflow		M_sms =	#N/A (mg/s)	
mass flux of liner leakage from Cat 1/2 stockpile		M_gC12 =	- (mg/s)	
mass flux of liner leakage from Cat 1/2 sumps		M_gC12s =	0.00000 (mg/s)	
mass flux of seepage from Overburden (Cat 1/2)		M_gO12 =	0.00174 (mg/s)	
mass flux of seepage from Overburden Pond - PW7		M_gOp7 =	0.00157 (mg/s)	
mass flux of surface water into SW-005		M_s5 =	2.15720 (mg/s)	
mass flux of ground water into SW-005		M_g5 =	0.13876 (mg/s)	
mass flux of surface water into USGS Gage		M_s6 =	0.23167 (mg/s)	
mass flux of ground water into USGS Gage		M_g6 =	0.02873 (mg/s)	
mass flux of surface water into Colby Lake		M_scl =	1.40684 (mg/s)	
mass flux of ground water into Colby Lake		M_gcl =	0.07152 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP		M_shl =	0.02329 (mg/s)	
		Average Flow		
Mass balance at each node	mass flux in river at SW-001	M_r1 =	0.4649 (mg/s)	
	mass flux in river at SW-002	M_r2 =	0.8028 (mg/s)	
	mass flux in river at SW-003	M_r3 =	0.9060 (mg/s)	
	mass flux in river at SW-004	M_r4 =	1.2853 (mg/s)	
	mass flux in river at SW-004A	M_r4A =	2.8000 (mg/s)	
	mass flux in river at SW-005	M_r5 =	5.0959 (mg/s)	
	mass flux in river at USGS Gage	M_r6 =	5.3563 (mg/s)	
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	6.8580 (mg/s)	
	concentration in river at SW-001	C_r1 =	0.00288 (mg/L)	
	concentration in river at SW-002	C_r2 =	0.00250 (mg/L)	
	concentration in river at SW-003	C_r3 =	0.00245 (mg/L)	
	concentration in river at SW-004	C_r4 =	0.00234 (mg/L)	
	concentration in river at SW-004A	C_r4A =	0.00221 (mg/L)	
	concentration in river at SW-005	C_r5 =	0.00216 (mg/L)	
	concentration in river at USGS Gage	C_r6 =	0.00216 (mg/L)	
	concentration in Colby Lake	C_cl =	0.00215 (mg/L)	

Partridge River Mass-Balance Model--Mine Site-Proposed Action - Proposed Action

Case	Year 1		
Parameter	Boron		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0450 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0450 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0450 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0450 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0450 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0450 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0450 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0450 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0450 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0960 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0870 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0870 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0870 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0870 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0870 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0870 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0870 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0870 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0005 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.4019 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.5026 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.7600 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0732 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0622 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0370 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0005 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.4019 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.5026 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.7600 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0732 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0622 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	0.0622 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0870 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0870 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0870 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	0.5000 (mg/L)
Convert concentration to mass flux	Average Flow		
	mass flux of surface water into SW-001	M_s1 =	5.75674 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.44318 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	2.71680 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	6.73824 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.88478 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	2.05829 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.26559 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00005 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00004 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	7.57893 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.79495 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00004 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00001 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00002 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.13461 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.03328 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00003 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00007 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	- (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	30.41817 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	3.42619 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.02387 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	0.06253 (mg/s)
	mass flux of surface water into SW-005	M_s5 =	46.00664 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	5.58897 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	4.94083 (mg/s)
mass flux of ground water into USGS Gage	M_g6 =	1.15719 (mg/s)	
mass flux of surface water into Colby Lake	M_scl =	30.00366 (mg/s)	
mass flux of ground water into Colby Lake	M_gcl =	2.88066 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.49667 (mg/s)	
Mass balance at each node	Average Flow		
	mass flux in river at SW-001	M_r1 =	8.9167 (mg/s)
	mass flux in river at SW-002	M_r2 =	16.5397 (mg/s)
	mass flux in river at SW-003	M_r3 =	18.8637 (mg/s)
	mass flux in river at SW-004	M_r4 =	27.4057 (mg/s)
	mass flux in river at SW-004A	M_r4A =	61.3364 (mg/s)
	mass flux in river at SW-005	M_r5 =	112.9320 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	119.0300 (mg/s)
Convert mass flux to concentration	Average Flow		
	concentration in river at SW-001	C_r1 =	0.05527 (mg/L)
	concentration in river at SW-002	C_r2 =	0.05149 (mg/L)
	concentration in river at SW-003	C_r3 =	0.05098 (mg/L)
	concentration in river at SW-004	C_r4 =	0.04980 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.04840 (mg/L)
	concentration in river at SW-005	C_r5 =	0.04798 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.04805 (mg/L)
	concentration in Colby Lake	C_cl =	0.04781 (mg/L)



Partridge River Mass-Balance Model--Mine Site-Proposed Action - Proposed Action

Case	Year 1			
Parameter	Barium			
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0077 (mg/L)	
	concentration of surface water into SW-002	C s2 =	0.0077 (mg/L)	
	concentration of surface water into SW-003	C s3 =	0.0077 (mg/L)	
	concentration of surface water into SW-004	C s4 =	0.0077 (mg/L)	
	concentration of surface water into SW-004A	C s4A =	0.0077 (mg/L)	
	concentration of surface water into SW-005	C s5 =	0.0077 (mg/L)	
	concentration of surface water into USGS Gage	C s6 =	0.0077 (mg/L)	
	concentration of surface water into Colby Lake	C scl =	0.0077 (mg/L)	
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0077 (mg/L)	
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0050 (mg/L)	
	concentration of West Pit overflow	C sms =	#N/A (mg/L)	
	concentration of ground water into SW-001	C g1 =	0.0219 (mg/L)	
	concentration of ground water into SW-002	C g2 =	0.0219 (mg/L)	
	concentration of ground water into SW-003	C g3 =	0.0219 (mg/L)	
	concentration of ground water into SW-004	C g4 =	0.0219 (mg/L)	
	concentration of ground water into SW-004A	C g4A =	0.0219 (mg/L)	
	concentration of ground water into SW-005	C g5 =	0.0219 (mg/L)	
	concentration of ground water into USGS Gage	C g6 =	0.0219 (mg/L)	
	concentration of ground water into Colby Lake	C gcl =	0.0219 (mg/L)	
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)	
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)	
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	0.0009 (mg/L)	
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	0.1900 (mg/L)	
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.1900 (mg/L)	
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.1900 (mg/L)	
	concentration of liner leakage from LOSP	C gC4LO =	0.0196 (mg/L)	
	concentration of seepage from Overburden (Storage)	C gOS =	0.0168 (mg/L)	
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	0.0140 (mg/L)	
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	0.0009 (mg/L)	
	concentration of liner leakage from Cat 3 sumps	C gC3s =	0.1900 (mg/L)	
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.1900 (mg/L)	
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.1900 (mg/L)	
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0196 (mg/L)	
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0168 (mg/L)	
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	0.0168 (mg/L)	
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0219 (mg/L)	
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0219 (mg/L)	
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0219 (mg/L)	
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.1500 (mg/L)	
	Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	0.98248 (mg/s)
		mass flux of ground water into SW-001	M g1 =	0.11166 (mg/s)
		mass flux of surface discharges from upstream of PM-1	M sns =	0.14150 (mg/s)
		mass flux of surface water into SW-002	M s2 =	1.14999 (mg/s)
mass flux of ground water into SW-002		M g2 =	0.22292 (mg/s)	
mass flux of surface water into SW-003		M s3 =	0.35128 (mg/s)	
mass flux of ground water into SW-003		M g3 =	0.06692 (mg/s)	
mass flux of seepage from East Pit to SW-003		M gep 003 =	#N/A (mg/s)	
mass flux of liner leakage from Cat 3 stockpile to SW-003		M gC3 003 =	0.00002 (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-003		M gC3LO 00 =	0.00001 (mg/s)	
mass flux of liner leakage from Cat 3 sumps to SW-003		M gC3s 003 =	0.00000 (mg/s)	
mass flux of surface water into SW-004		M s4 =	1.29347 (mg/s)	
mass flux of ground water into SW-004		M g4 =	0.20029 (mg/s)	
mass flux of seepage from East Pit to SW-004		M gep 004 =	#N/A (mg/s)	
mass flux of seepage from West Pit		M gwp =	#N/A (mg/s)	
mass flux of liner leakage from Cat 3 stockpile to SW-004		M gC3 004 =	- (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-004		M gC3LO 00 =	0.00001 (mg/s)	
mass flux of liner leakage from Cat 4 stockpile		M gC4 =	0.00000 (mg/s)	
mass flux of liner leakage from LOSP		M gC4LO =	0.00000 (mg/s)	
mass flux of seepage from Overburden (Storage)		M gOS =	0.03643 (mg/s)	
mass flux of liner leakage from Cat 3LO sumps to SW-004		M gC3LOs 0 =	0.00000 (mg/s)	
mass flux of liner leakage from Cat 4 sumps		M gC4s =	0.00000 (mg/s)	
mass flux of liner leakage from LOSP sumps		M gC4LOs =	0.00000 (mg/s)	
mass flux of seepage from Overburden Ponds - PW1		M gOp1 =	0.00901 (mg/s)	
mass flux of leakage from Haul Road Pond - PW2		M gHRp2 =	0.00001 (mg/s)	
mass flux of leakage from Haul Road Pond - PW4		M gHRp4 =	0.00002 (mg/s)	
mass flux of leakage from RTH Pond - PW3		M gRTHp =	0.00000 (mg/s)	
mass flux of liner leakage from WWTF pond		M gWTFp =	- (mg/s)	
mass flux of surface water into SW-004A		M s4A =	5.19137 (mg/s)	
mass flux of ground water into SW-004A		M g4A =	0.86324 (mg/s)	
mass flux of West Pit overflow		M sms =	#N/A (mg/s)	
mass flux of liner leakage from Cat 1/2 stockpile		M gC12 =	- (mg/s)	
mass flux of liner leakage from Cat 1/2 sumps		M gC12s =	0.00000 (mg/s)	
mass flux of seepage from Overburden (Cat 1/2)		M gO12 =	0.00903 (mg/s)	
mass flux of seepage from Overburden Pond - PW7		M gOp7 =	0.01692 (mg/s)	
mass flux of surface water into SW-005		M s5 =	7.85180 (mg/s)	
mass flux of ground water into SW-005		M g5 =	1.40816 (mg/s)	
mass flux of surface water into USGS Gage		M s6 =	0.84323 (mg/s)	
mass flux of ground water into USGS Gage		M g6 =	0.29156 (mg/s)	
mass flux of surface water into Colby Lake		M scl =	5.12062 (mg/s)	
mass flux of ground water into Colby Lake		M gcl =	0.72579 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP		M shl =	0.08476 (mg/s)	
Mass balance at each node		Average Flow		
	mass flux in river at SW-001	M r1 =	1.2358 (mg/s)	
	mass flux in river at SW-002	M r2 =	2.6086 (mg/s)	
	mass flux in river at SW-003	M r3 =	3.0268 (mg/s)	
	mass flux in river at SW-004	M r4 =	4.5660 (mg/s)	
	mass flux in river at SW-004A	M r4A =	10.6466 (mg/s)	
	mass flux in river at SW-005	M r5 =	19.9066 (mg/s)	
	mass flux in river at USGS Gage	M r6 =	21.0414 (mg/s)	
mass flux into Colby Lake	M cl =	26.9725 (mg/s)		
Convert mass flux to concentration	Average Flow			
	concentration in river at SW-001	C r1 =	0.00766 (mg/L)	
	concentration in river at SW-002	C r2 =	0.00812 (mg/L)	
	concentration in river at SW-003	C r3 =	0.00818 (mg/L)	
	concentration in river at SW-004	C r4 =	0.00830 (mg/L)	
	concentration in river at SW-004A	C r4A =	0.00840 (mg/L)	
	concentration in river at SW-005	C r5 =	0.00846 (mg/L)	
	concentration in river at USGS Gage	C r6 =	0.00849 (mg/L)	
concentration in Colby Lake	C cl =	0.00846 (mg/L)		

Partridge River Mass-Balance Model--Mine Site-Proposed Action - Proposed Action

Case		Year 1	
Parameter		Beryllium	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0001 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0001 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0001 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0001 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0001 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0001 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0001 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0001 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0001 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0001 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0001 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0001 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0001 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0001 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0001 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0001 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0001 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0001 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0000 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0002 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0023 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0023 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	- (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0000 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0002 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0023 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0023 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	- (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	- (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0001 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0001 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0001 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0018 (mg/L)
		Average Flow	
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	0.01279 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00074 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.00283 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	0.01497 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.00147 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.00457 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00044 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.01684 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.00132 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	- (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	- (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	0.06760 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.00571 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	- (mg/s)
	mass flux of surface water into SW-005	M_s5 =	0.10224 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.00931 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.01098 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.00193 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	0.06667 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.00480 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00110 (mg/s)
		Average Flow	
Mass balance at each node	mass flux in river at SW-001	M_r1 =	0.0164 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.0328 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.0378 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.0560 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.1293 (mg/s)
	mass flux in river at SW-005	M_r5 =	0.2409 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	0.2538 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	0.3263 (mg/s)
			Average Flow
	concentration in river at SW-001	C_r1 =	0.00010 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00010 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00010 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00010 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00010 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00010 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00010 (mg/L)
	concentration in Colby Lake	C_cl =	0.00010 (mg/L)



**Partridge River Mass-Balance Model--Mine Site-Proposed Action - Proposed Action**

Case	Year 1		
Parameter	Calcium		
Input concentration data	concentration of surface water into SW-001	C s1 =	17.0000 (mg/L)
	concentration of surface water into SW-002	C s2 =	17.0000 (mg/L)
	concentration of surface water into SW-003	C s3 =	17.0000 (mg/L)
	concentration of surface water into SW-004	C s4 =	17.0000 (mg/L)
	concentration of surface water into SW-004A	C s4A =	17.0000 (mg/L)
	concentration of surface water into SW-005	C s5 =	17.0000 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	17.0000 (mg/L)
	concentration of surface water into Colby Lake	C scl =	17.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	17.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	24.5000 (mg/L)
	concentration of West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	14.7900 (mg/L)
	concentration of ground water into SW-002	C g2 =	14.7900 (mg/L)
	concentration of ground water into SW-003	C g3 =	14.7900 (mg/L)
	concentration of ground water into SW-004	C g4 =	14.7900 (mg/L)
	concentration of ground water into SW-004A	C g4A =	14.7900 (mg/L)
	concentration of ground water into SW-005	C g5 =	14.7900 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	14.7900 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	14.7900 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	0.1447 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	259.1159 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	324.0667 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	59.8817 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	5.1587 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	9.3700 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	15.8000 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	0.1447 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C gC3s =	259.1159 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	324.0667 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	59.8817 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	5.1587 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	9.3700 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	9.3700 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	14.7900 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	14.7900 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	14.7900 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	179.0000 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	2,174.76906 (mg/s)
	mass flux of ground water into SW-001	M g1 =	75.34026 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	693.35000 (mg/s)
	mass flux of surface water into SW-002	M s2 =	2,545.55623 (mg/s)
	mass flux of ground water into SW-002	M g2 =	150.41258 (mg/s)
	mass flux of surface water into SW-003	M s3 =	777.57630 (mg/s)
	mass flux of ground water into SW-003	M g3 =	45.15051 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M gC3_003 =	0.03289 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_00 =	0.02261 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M gC3s_003 =	0.00014 (mg/s)
	mass flux of surface water into SW-004	M s4 =	2,863.15274 (mg/s)
	mass flux of ground water into SW-004	M g4 =	135.14150 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_00 =	0.02261 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00106 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00111 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	20.27794 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_0 =	0.00032 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00003 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	5.01400 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00563 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.01206 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	- (mg/s)
	mass flux of surface water into SW-004A	M s4A =	11,491.30985 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	582.45226 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M gO12 =	10.19228 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	9.42024 (mg/s)
	mass flux of surface water into SW-005	M s5 =	17,380.28692 (mg/s)
	mass flux of ground water into SW-005	M g5 =	950.12439 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	1,866.53497 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	196.72179 (mg/s)
mass flux of surface water into Colby Lake	M scl =	11,334.71600 (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	489.71169 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	187.62900 (mg/s)	
Mass balance at each node	Average Flow		
	mass flux in river at SW-001	M r1 =	2,943.4593 (mg/s)
	mass flux in river at SW-002	M r2 =	5,639.4281 (mg/s)
	mass flux in river at SW-003	M r3 =	6,462.2106 (mg/s)
	mass flux in river at SW-004	M r4 =	9,485.8397 (mg/s)
	mass flux in river at SW-004A	M r4A =	21,579.2143 (mg/s)
	mass flux in river at SW-005	M r5 =	39,909.6256 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M r6 =	41,972.8824 (mg/s)
	mass flux into Colby Lake	M cl =	53,984.9391 (mg/s)
Convert mass flux to concentration	Average Flow		
	concentration in river at SW-001	C r1 =	18.24591 (mg/L)
	concentration in river at SW-002	C r2 =	17.55573 (mg/L)
	concentration in river at SW-003	C r3 =	17.46436 (mg/L)
	concentration in river at SW-004	C r4 =	17.23815 (mg/L)
	concentration in river at SW-004A	C r4A =	17.02807 (mg/L)
	concentration in river at SW-005	C r5 =	16.95480 (mg/L)
	concentration in river at USGS Gage	C r6 =	16.94518 (mg/L)
concentration in Colby Lake	C cl =	16.93445 (mg/L)	

**Partridge River Mass-Balance Model--Mine Site-Proposed Action - Proposed Action**

Case		Year 1	
Parameter		Cadmium	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0001 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0001 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0001 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0001 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0001 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0001 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0001 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0001 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0001 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0001 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0001 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0001 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0001 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0001 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0001 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0001 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0001 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0001 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0000 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0002 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0149 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0149 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0001 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0000 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0002 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0149 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0149 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0001 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	0.0001 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0001 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0001 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0001 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0069 (mg/L)
		<b>Average Flow</b>	
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	0.01279 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00051 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.00283 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	0.01497 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.00102 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.00457 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00031 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.01684 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.00091 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00013 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00003 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	- (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	0.06760 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.00394 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	0.00006 (mg/s)
	mass flux of surface water into SW-005	M_s5 =	0.10224 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.00642 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.01098 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.00133 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	0.06667 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.00331 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00110 (mg/s)
		<b>Average Flow</b>	
Mass balance at each node	mass flux in river at SW-001	M_r1 =	0.0161 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.0321 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.0370 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.0549 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.1265 (mg/s)
	mass flux in river at SW-005	M_r5 =	0.2352 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	0.2475 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	0.3186 (mg/s)
			<b>Average Flow</b>
	concentration in river at SW-001	C_r1 =	0.00010 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00010 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00010 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00010 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00010 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00010 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00010 (mg/L)
	concentration in Colby Lake	C_cl =	0.00010 (mg/L)

Partridge River Mass-Balance Model--Mine Site-Proposed Action - Proposed Action

Case	Year 1		
Parameter	Chloride		
Input concentration data	concentration of surface water into SW-001	C_s1 =	8.0000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	8.0000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	8.0000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	8.0000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	8.0000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	8.0000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	8.0000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	8.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	8.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	1.6000 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	6.6000 (mg/L)
	concentration of ground water into SW-002	C_g2 =	6.6000 (mg/L)
	concentration of ground water into SW-003	C_g3 =	6.6000 (mg/L)
	concentration of ground water into SW-004	C_g4 =	6.6000 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	6.6000 (mg/L)
	concentration of ground water into SW-005	C_g5 =	6.6000 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	6.6000 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	6.6000 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0593 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	13.6848 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	17.1151 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	5.4635 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.5188 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	5.3500 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	2.3300 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0593 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	13.6848 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_g3LOs =	17.1151 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	5.4635 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.5188 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	5.3500 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	5.3500 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	6.6000 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	6.6000 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	6.6000 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	10.4000 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	1,023.42074 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	33.62040 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	45.28000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	1,197.90882 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	67.12123 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	365.91826 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	20.14830 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00174 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00119 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00001 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	1,347.36600 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	60.30655 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00119 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00010 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00011 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	11.57812 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00002 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	2.86285 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00251 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00538 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
mass flux of liner leakage from WWTF pond	M_gWTFp =	- (mg/s)	
mass flux of surface water into SW-004A	M_s4A =	5,407.67522 (mg/s)	
mass flux of ground water into SW-004A	M_g4A =	259.91785 (mg/s)	
mass flux of West Pit overflow	M_sms =	#N/A (mg/s)	
mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	- (mg/s)	
mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)	
mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	1.50304 (mg/s)	
mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	5.37868 (mg/s)	
mass flux of surface water into SW-005	M_s5 =	8,178.95855 (mg/s)	
mass flux of ground water into SW-005	M_g5 =	423.99060 (mg/s)	
mass flux of surface water into USGS Gage	M_s6 =	878.36940 (mg/s)	
mass flux of ground water into USGS Gage	M_g6 =	87.78660 (mg/s)	
mass flux of surface water into Colby Lake	M_scl =	5,333.98400 (mg/s)	
mass flux of ground water into Colby Lake	M_gcl =	218.53260 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M_shl =	88.29600 (mg/s)	
Mass balance at each node	Average Flow		
	mass flux in river at SW-001	M_r1 =	1,102.3211 (mg/s)
	mass flux in river at SW-002	M_r2 =	2,367.3512 (mg/s)
	mass flux in river at SW-003	M_r3 =	2,753.4207 (mg/s)
	mass flux in river at SW-004	M_r4 =	4,175.5435 (mg/s)
	mass flux in river at SW-004A	M_r4A =	9,850.0183 (mg/s)
	mass flux in river at SW-005	M_r5 =	18,452.9675 (mg/s)
mass flux in river at USGS Gage	M_r6 =	19,419.1235 (mg/s)	
mass flux into Colby Lake	M_cl =	25,059.9361 (mg/s)	
Convert mass flux to concentration	Average Flow		
	concentration in river at SW-001	C_r1 =	6.83307 (mg/L)
	concentration in river at SW-002	C_r2 =	7.36964 (mg/L)
	concentration in river at SW-003	C_r3 =	7.44122 (mg/L)
	concentration in river at SW-004	C_r4 =	7.58801 (mg/L)
	concentration in river at SW-004A	C_r4A =	7.77261 (mg/L)
	concentration in river at SW-005	C_r5 =	7.83937 (mg/L)
	concentration in river at USGS Gage	C_r6 =	7.83984 (mg/L)
	concentration in Colby Lake	C_cl =	7.86101 (mg/L)

**Partridge River Mass-Balance Model--Mine Site-Proposed Action - Proposed Action**

Case		Year 1	
Parameter		Cobalt	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0005 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0005 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0005 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0005 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0005 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0005 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0005 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0005 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0005 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0005 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0017 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0017 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0017 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0017 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0017 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0017 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0017 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0017 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0000 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.0520 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0520 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	2.1079 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.1816 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0011 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0013 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0000 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.0520 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0520 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	2.1079 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.1816 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0011 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	0.0011 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0017 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0017 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0017 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.2000 (mg/L)
		<b>Average Flow</b>	
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	0.06396 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00841 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.01415 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	0.07487 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.01678 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.02287 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00504 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.08421 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.01508 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00004 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00004 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00240 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00059 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	- (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	0.33798 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.06498 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.00084 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	0.00112 (mg/s)
	mass flux of surface water into SW-005	M_s5 =	0.51118 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.10600 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.05490 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.02195 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	0.33337 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.05463 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00552 (mg/s)
		<b>Average Flow</b>	
Mass balance at each node	mass flux in river at SW-001	M_r1 =	0.0865 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.1782 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.2061 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.3065 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.7134 (mg/s)
	mass flux in river at SW-005	M_r5 =	1.3305 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	1.4074 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	1.8009 (mg/s)
			<b>Average Flow</b>
	concentration in river at SW-001	C_r1 =	0.00054 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00055 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00056 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00056 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00056 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00057 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00057 (mg/L)
	concentration in Colby Lake	C_cl =	0.00056 (mg/L)

**Partridge River Mass-Balance Model--Mine Site-Proposed Action - Proposed Action**

Case Parameter	Year 1 Copper		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0017 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0017 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0017 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0017 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0017 (mg/L)
	concentration of surface water into USGS Gage	C_s5 =	0.0017 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0017 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0017 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0190 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0012 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0030 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0030 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0030 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0030 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0030 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0030 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0030 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0030 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.0920 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0920 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.3805 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0328 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0214 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0170 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.0920 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0920 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.3805 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0328 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0214 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	0.0214 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0030 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0030 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0030 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0970 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	0.21748 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.01503 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.03509 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	0.25456 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.03000 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.07776 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00901 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.28632 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.02696 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00001 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.04640 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.01147 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	- (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	1.14913 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.11618 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.01097 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	0.02155 (mg/s)
	mass flux of surface water into SW-005	M_s5 =	1.73803 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.18951 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.18665 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.03924 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	1.13347 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.09768 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.20970 (mg/s)
Mass balance at each node	Average Flow		
	mass flux in river at SW-001	M_r1 =	0.2676 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.5522 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.6389 (mg/s)
	mass flux in river at SW-004	M_r4 =	1.0101 (mg/s)
	mass flux in river at SW-004A	M_r4A =	2.3079 (mg/s)
	mass flux in river at SW-005	M_r5 =	4.2365 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	4.4614 (mg/s)
	mass flux into Colby Lake	M_cl =	5.9022 (mg/s)
Convert mass flux to concentration	Average Flow		
	concentration in river at SW-001	C_r1 =	0.00166 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00172 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00173 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00184 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00182 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00180 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00180 (mg/L)
	concentration in Colby Lake	C_cl =	0.00185 (mg/L)

Partridge River Mass-Balance Model--Mine Site-Proposed Action - Proposed Action

Case	Year 1		
Parameter	Fluoride		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0700 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0700 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0700 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0700 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0700 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0700 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0700 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0700 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0700 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.1400 (mg/L)
	concentration of West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.2800 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.2800 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.2800 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.2800 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.2800 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.2800 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.2800 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.2800 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	0.0043 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	0.0626 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0625 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0630 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.0631 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.2239 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	0.4200 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	0.0043 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C gC3s =	0.0626 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.0625 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0630 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0631 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.2239 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	0.2239 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.2800 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.2800 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.2800 (mg/L)
	concentration of liner leakage from WWTF pond	C gWTFp =	1.9000 (mg/L)
Average Flow			
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	8.95493 (mg/s)
	mass flux of ground water into SW-001	M g1 =	1.42632 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	3.96200 (mg/s)
	mass flux of surface water into SW-002	M s2 =	10.48170 (mg/s)
	mass flux of ground water into SW-002	M g2 =	2.84757 (mg/s)
	mass flux of surface water into SW-003	M s3 =	3.20178 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.85478 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep 003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M gC3 003 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO 00 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M gC3s 003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	11.78945 (mg/s)
	mass flux of ground water into SW-004	M g4 =	2.55846 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep 004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M gC3 004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO 00 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.48453 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs 0 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.11981 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00011 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00023 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	- (mg/s)
	mass flux of surface water into SW-004A	M s4A =	47.31716 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	11.02682 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M gO12 =	0.27093 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	0.22509 (mg/s)
	mass flux of surface water into SW-005	M s5 =	71.56589 (mg/s)
	mass flux of ground water into SW-005	M g5 =	17.98748 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	7.68573 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	3.72428 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	46.67236 (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	9.27108 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.77259 (mg/s)
Average Flow			
Mass balance at each node	mass flux in river at SW-001	M r1 =	14.3433 (mg/s)
	mass flux in river at SW-002	M r2 =	27.6725 (mg/s)
	mass flux in river at SW-003	M r3 =	31.7291 (mg/s)
	mass flux in river at SW-004	M r4 =	46.6817 (mg/s)
	mass flux in river at SW-004A	M r4A =	105.5217 (mg/s)
	mass flux in river at SW-005	M r5 =	195.0751 (mg/s)
	mass flux in river at USGS Gage	M r6 =	206.4851 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M cl =	263.2011 (mg/s)
	concentration in river at SW-001	C r1 =	0.08891 (mg/L)
	concentration in river at SW-002	C r2 =	0.08615 (mg/L)
	concentration in river at SW-003	C r3 =	0.08575 (mg/L)
	concentration in river at SW-004	C r4 =	0.08483 (mg/L)
	concentration in river at SW-004A	C r4A =	0.08327 (mg/L)
	concentration in river at SW-005	C r5 =	0.08287 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.08336 (mg/L)
	concentration in Colby Lake	C cl =	0.08256 (mg/L)



Partridge River Mass-Balance Model--Mine Site-Proposed Action - Proposed Action

Case	Year 1			
Parameter	Iron			
Input concentration data	concentration of surface water into SW-001	C_s1 =	1.6000 (mg/L)	
	concentration of surface water into SW-002	C_s2 =	1.6000 (mg/L)	
	concentration of surface water into SW-003	C_s3 =	1.6000 (mg/L)	
	concentration of surface water into SW-004	C_s4 =	1.6000 (mg/L)	
	concentration of surface water into SW-004A	C_s4A =	1.6000 (mg/L)	
	concentration of surface water into SW-005	C_s5 =	1.6000 (mg/L)	
	concentration of surface water into USGS Gage	C_s6 =	1.6000 (mg/L)	
	concentration of surface water into Colby Lake	C_scl =	1.6000 (mg/L)	
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	1.6000 (mg/L)	
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0300 (mg/L)	
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)	
	concentration of ground water into SW-001	C_g1 =	2.8440 (mg/L)	
	concentration of ground water into SW-002	C_g2 =	2.8440 (mg/L)	
	concentration of ground water into SW-003	C_g3 =	2.8440 (mg/L)	
	concentration of ground water into SW-004	C_g4 =	2.8440 (mg/L)	
	concentration of ground water into SW-004A	C_g4A =	2.8440 (mg/L)	
	concentration of ground water into SW-005	C_g5 =	2.8440 (mg/L)	
	concentration of ground water into USGS Gage	C_g6 =	2.8440 (mg/L)	
	concentration of ground water into Colby Lake	C_gcl =	2.8440 (mg/L)	
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)	
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)	
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0016 (mg/L)	
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.8100 (mg/L)	
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.8100 (mg/L)	
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	235.0000 (mg/L)	
	concentration of liner leakage from LOSP	C_gC4LO =	45.0486 (mg/L)	
	concentration of seepage from Overburden (Storage)	C_gOS =	0.2255 (mg/L)	
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.1500 (mg/L)	
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0016 (mg/L)	
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.8100 (mg/L)	
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.8100 (mg/L)	
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	235.0000 (mg/L)	
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	45.0486 (mg/L)	
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.2255 (mg/L)	
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	0.2255 (mg/L)	
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	2.8440 (mg/L)	
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	2.8440 (mg/L)	
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	2.8440 (mg/L)	
	concentration of liner leakage from WWTF pond	C_gWTFp =	29.4000 (mg/L)	
			Average Flow	
	Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	204.68415 (mg/s)
		mass flux of ground water into SW-001	M_g1 =	14.48734 (mg/s)
		mass flux of surface discharges from upstream of PM-1	M_sns =	0.84900 (mg/s)
mass flux of surface water into SW-002		M_s2 =	239.58176 (mg/s)	
mass flux of ground water into SW-002		M_g2 =	28.92315 (mg/s)	
mass flux of surface water into SW-003		M_s3 =	73.18365 (mg/s)	
mass flux of ground water into SW-003		M_g3 =	8.68209 (mg/s)	
mass flux of seepage from East Pit to SW-003		M_gep_003 =	#N/A (mg/s)	
mass flux of liner leakage from Cat 3 stockpile to SW-003		M_gC3_003 =	0.00010 (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-003		M_gC3LO_00 =	0.00006 (mg/s)	
mass flux of liner leakage from Cat 3 sumps to SW-003		M_gC3s_003 =	0.00000 (mg/s)	
mass flux of surface water into SW-004		M_s4 =	269.47320 (mg/s)	
mass flux of ground water into SW-004		M_g4 =	25.98664 (mg/s)	
mass flux of seepage from East Pit to SW-004		M_gep_004 =	#N/A (mg/s)	
mass flux of seepage from West Pit		M_gwp =	#N/A (mg/s)	
mass flux of liner leakage from Cat 3 stockpile to SW-004		M_gC3_004 =	- (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-004		M_gC3LO_00 =	0.00006 (mg/s)	
mass flux of liner leakage from Cat 4 stockpile		M_gC4 =	0.00415 (mg/s)	
mass flux of liner leakage from LOSP		M_gC4LO =	0.00969 (mg/s)	
mass flux of seepage from Overburden (Storage)		M_gOS =	0.48801 (mg/s)	
mass flux of liner leakage from Cat 3LO sumps to SW-004		M_gC3LOs_0 =	0.00000 (mg/s)	
mass flux of liner leakage from Cat 4 sumps		M_gC4s =	0.00011 (mg/s)	
mass flux of liner leakage from LOSP sumps		M_gC4LOs =	0.00004 (mg/s)	
mass flux of seepage from Overburden Ponds - PW1		M_gOp1 =	0.12067 (mg/s)	
mass flux of leakage from Haul Road Pond - PW2		M_gHRp2 =	0.00108 (mg/s)	
mass flux of leakage from Haul Road Pond - PW4		M_gHRp4 =	0.00232 (mg/s)	
mass flux of leakage from RTH Pond - PW3		M_gRTHp =	0.00000 (mg/s)	
mass flux of liner leakage from WWTF pond		M_gWTFp =	- (mg/s)	
mass flux of surface water into SW-004A		M_s4A =	1,081.53504 (mg/s)	
mass flux of ground water into SW-004A		M_g4A =	112.00096 (mg/s)	
mass flux of West Pit overflow		M_sms =	#N/A (mg/s)	
mass flux of liner leakage from Cat 1/2 stockpile		M_gC12 =	- (mg/s)	
mass flux of liner leakage from Cat 1/2 sumps		M_gC12s =	0.00000 (mg/s)	
mass flux of seepage from Overburden (Cat 1/2)		M_gO12 =	0.09676 (mg/s)	
mass flux of seepage from Overburden Pond - PW7		M_gOp7 =	0.22671 (mg/s)	
mass flux of surface water into SW-005		M_s5 =	1,635.79171 (mg/s)	
mass flux of ground water into SW-005		M_g5 =	182.70140 (mg/s)	
mass flux of surface water into USGS Gage		M_s6 =	175.67388 (mg/s)	
mass flux of ground water into USGS Gage		M_g6 =	37.82804 (mg/s)	
mass flux of surface water into Colby Lake		M_scl =	1,066.79680 (mg/s)	
mass flux of ground water into Colby Lake		M_gcl =	94.16768 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP		M_shl =	17.65920 (mg/s)	
		Average Flow		
Mass balance at each node	mass flux in river at SW-001	M_r1 =	220.0205 (mg/s)	
	mass flux in river at SW-002	M_r2 =	488.5264 (mg/s)	
	mass flux in river at SW-003	M_r3 =	570.3913 (mg/s)	
	mass flux in river at SW-004	M_r4 =	866.4773 (mg/s)	
	mass flux in river at SW-004A	M_r4A =	2,060.3367 (mg/s)	
	mass flux in river at SW-005	M_r5 =	3,878.8298 (mg/s)	
	mass flux in river at USGS Gage	M_r6 =	4,092.3318 (mg/s)	
mass flux into Colby Lake	M_cl =	5,270.9555 (mg/s)		
		Average Flow		
Convert mass flux to concentration	concentration in river at SW-001	C_r1 =	1.36386 (mg/L)	
	concentration in river at SW-002	C_r2 =	1.52080 (mg/L)	
	concentration in river at SW-003	C_r3 =	1.54150 (mg/L)	
	concentration in river at SW-004	C_r4 =	1.57461 (mg/L)	
	concentration in river at SW-004A	C_r4A =	1.62580 (mg/L)	
	concentration in river at SW-005	C_r5 =	1.64784 (mg/L)	
	concentration in river at USGS Gage	C_r6 =	1.65214 (mg/L)	
concentration in Colby Lake	C_cl =	1.65344 (mg/L)		

Partridge River Mass-Balance Model--Mine Site-Proposed Action - Proposed Action

Case	Year 1		
Parameter	Hardness		
Input concentration data	concentration of surface water into SW-001	C_s1 =	110.0000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	110.0000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	110.0000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	110.0000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	110.0000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	110.0000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	110.0000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	110.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	110.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	110.0000 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	66.4200 (mg/L)
	concentration of ground water into SW-002	C_g2 =	66.4200 (mg/L)
	concentration of ground water into SW-003	C_g3 =	66.4200 (mg/L)
	concentration of ground water into SW-004	C_g4 =	66.4200 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	66.4200 (mg/L)
	concentration of ground water into SW-005	C_g5 =	66.4200 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	66.4200 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	66.4200 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.4690 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	826.7600 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	1,033.9984 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	428.7605 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	36.9371 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	43.5200 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	71.5000 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.4690 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	826.7600 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	1,033.9984 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	428.7605 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	36.9371 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	43.5200 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	43.5200 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	66.4200 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	66.4200 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	66.4200 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	629.0000 (mg/L)
Convert concentration to mass flux			Average Flow
	mass flux of surface water into SW-001	M_s1 =	14,072.03511 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	338.34348 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	3,113.00000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	16,471.24622 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	675.48367 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	5,031.37606 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	202.76516 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.10494 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.07214 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00043 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	18,526.28243 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	606.90322 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.07214 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00756 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00795 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	94.18314 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00102 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00020 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00003 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	23.28806 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.02527 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.05414 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00002 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	- (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	74,355.53429 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	2,615.71869 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	46.12328 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	43.75333 (mg/s)
	mass flux of surface water into SW-005	M_s5 =	112,460.68005 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	4,266.88722 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	12,077.57922 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	883.45242 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	73,342.28000 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	2,199.23262 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTF	M_shl =	1,214.07000 (mg/s)
Mass balance at each node			Average Flow
	mass flux in river at SW-001	M_r1 =	17,523.3786 (mg/s)
	mass flux in river at SW-002	M_r2 =	34,670.1085 (mg/s)
	mass flux in river at SW-003	M_r3 =	39,904.4272 (mg/s)
	mass flux in river at SW-004	M_r4 =	59,155.2528 (mg/s)
	mass flux in river at SW-004A	M_r4A =	136,216.3824 (mg/s)
	mass flux in river at SW-005	M_r5 =	252,943.9457 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	265,904.9813 (mg/s)
	mass flux into Colby Lake	M_cl =	342,660.5640 (mg/s)
Convert mass flux to concentration			Average Flow
	concentration in river at SW-001	C_r1 =	108.62389 (mg/L)
	concentration in river at SW-002	C_r2 =	107.92921 (mg/L)
	concentration in river at SW-003	C_r3 =	107.84315 (mg/L)
	concentration in river at SW-004	C_r4 =	107.49995 (mg/L)
	concentration in river at SW-004A	C_r4A =	107.48779 (mg/L)
	concentration in river at SW-005	C_r5 =	107.45813 (mg/L)
	concentration in river at USGS Gage	C_r6 =	107.35043 (mg/L)
	concentration in Colby Lake	C_cl =	107.48864 (mg/L)

Partridge River Mass-Balance Model--Mine Site-Proposed Action - Proposed Action

Case	Year 1			
Parameter	Potassium			
Input concentration data	concentration of surface water into SW-001	C s1 =	1.3000 (mg/L)	
	concentration of surface water into SW-002	C s2 =	1.3000 (mg/L)	
	concentration of surface water into SW-003	C s3 =	1.3000 (mg/L)	
	concentration of surface water into SW-004	C s4 =	1.3000 (mg/L)	
	concentration of surface water into SW-004A	C s4A =	1.3000 (mg/L)	
	concentration of surface water into SW-005	C s5 =	1.3000 (mg/L)	
	concentration of surface water into USGS Gage	C s6 =	1.3000 (mg/L)	
	concentration of surface water into Colby Lake	C scl =	1.3000 (mg/L)	
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	1.3000 (mg/L)	
	concentration of surface water discharges from upstream of PM-1	C sns =	2.7000 (mg/L)	
	concentration of West Pit overflow	C sms =	#N/A (mg/L)	
	concentration of ground water into SW-001	C g1 =	1.7500 (mg/L)	
	concentration of ground water into SW-002	C g2 =	1.7500 (mg/L)	
	concentration of ground water into SW-003	C g3 =	1.7500 (mg/L)	
	concentration of ground water into SW-004	C g4 =	1.7500 (mg/L)	
	concentration of ground water into SW-004A	C g4A =	1.7500 (mg/L)	
	concentration of ground water into SW-005	C g5 =	1.7500 (mg/L)	
	concentration of ground water into USGS Gage	C g6 =	1.7500 (mg/L)	
	concentration of ground water into Colby Lake	C gcl =	1.7500 (mg/L)	
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)	
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)	
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	0.0885 (mg/L)	
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	49.0000 (mg/L)	
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	49.0000 (mg/L)	
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	38.0000 (mg/L)	
	concentration of liner leakage from LOSP	C gC4LO =	4.6664 (mg/L)	
	concentration of seepage from Overburden (Storage)	C gOS =	2.2600 (mg/L)	
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	4.4500 (mg/L)	
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	0.0885 (mg/L)	
	concentration of liner leakage from Cat 3 sumps	C gC3s =	49.0000 (mg/L)	
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	49.0000 (mg/L)	
	concentration of liner leakage from Cat 4 sumps	C gC4s =	38.0000 (mg/L)	
	concentration of liner leakage from LOSP sumps	C gC4LOs =	4.6664 (mg/L)	
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	2.2600 (mg/L)	
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	2.2600 (mg/L)	
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	1.7500 (mg/L)	
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	1.7500 (mg/L)	
	concentration of leakage from RTH Pond - PW3	C gRTHp =	1.7500 (mg/L)	
	concentration of liner leakage from WWTF ponc	C_gWTFp =	24.5000 (mg/L)	
	Average Flow			
	Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	166.30587 (mg/s)
		mass flux of ground water into SW-001	M g1 =	8.91450 (mg/s)
mass flux of surface discharges from upstream of PM-1		M sns =	76.41000 (mg/s)	
mass flux of surface water into SW-002		M s2 =	194.66018 (mg/s)	
mass flux of ground water into SW-002		M g2 =	17.79730 (mg/s)	
mass flux of surface water into SW-003		M s3 =	59.46172 (mg/s)	
mass flux of ground water into SW-003		M g3 =	5.34235 (mg/s)	
mass flux of seepage from East Pit to SW-003		M gep 003 =	#N/A (mg/s)	
mass flux of liner leakage from Cat 3 stockpile to SW-003		M gC3 003 =	0.00622 (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-003		M gC3LO 00 =	0.00342 (mg/s)	
mass flux of liner leakage from Cat 3 sumps to SW-003		M gC3s 003 =	0.00003 (mg/s)	
mass flux of surface water into SW-004		M s4 =	218.94697 (mg/s)	
mass flux of ground water into SW-004		M g4 =	15.99037 (mg/s)	
mass flux of seepage from East Pit to SW-004		M gep 004 =	#N/A (mg/s)	
mass flux of seepage from West Pit		M gwp =	#N/A (mg/s)	
mass flux of liner leakage from Cat 3 stockpile to SW-004		M gC3 004 =	- (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-004		M gC3LO 00 =	0.00342 (mg/s)	
mass flux of liner leakage from Cat 4 stockpile		M gC4 =	0.00067 (mg/s)	
mass flux of liner leakage from LOSP		M gC4LO =	0.00100 (mg/s)	
mass flux of seepage from Overburden (Storage)		M gOS =	4.89094 (mg/s)	
mass flux of liner leakage from Cat 3LO sumps to SW-004		M gC3LOs 0 =	0.00005 (mg/s)	
mass flux of liner leakage from Cat 4 sumps		M gC4s =	0.00002 (mg/s)	
mass flux of liner leakage from LOSP sumps		M gC4LOs =	0.00000 (mg/s)	
mass flux of seepage from Overburden Ponds - PW1		M gOp1 =	1.20935 (mg/s)	
mass flux of leakage from Haul Road Pond - PW2		M gHRp2 =	0.00067 (mg/s)	
mass flux of leakage from Haul Road Pond - PW4		M gHRp4 =	0.00143 (mg/s)	
mass flux of leakage from RTH Pond - PW3		M gRTHp =	0.00000 (mg/s)	
mass flux of liner leakage from WWTF pond		M gWTFp =	- (mg/s)	
mass flux of surface water into SW-004A		M s4A =	878.74722 (mg/s)	
mass flux of ground water into SW-004A		M g4A =	68.91761 (mg/s)	
mass flux of West Pit overflow		M sms =	#N/A (mg/s)	
mass flux of liner leakage from Cat 1/2 stockpile		M gC12 =	- (mg/s)	
mass flux of liner leakage from Cat 1/2 sumps		M gC12s =	0.00000 (mg/s)	
mass flux of seepage from Overburden (Cat 1/2)		M gO12 =	2.87061 (mg/s)	
mass flux of seepage from Overburden Pond - PW7		M gOp7 =	2.27212 (mg/s)	
mass flux of surface water into SW-005		M s5 =	1,329.08076 (mg/s)	
mass flux of ground water into SW-005		M g5 =	112.42175 (mg/s)	
mass flux of surface water into USGS Gage		M s6 =	142.73503 (mg/s)	
mass flux of ground water into USGS Gage		M g6 =	23.27675 (mg/s)	
mass flux of surface water into Colby Lake		M scl =	866.77240 (mg/s)	
mass flux of ground water into Colby Lake		M gcl =	57.94425 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP		M shl =	14.34810 (mg/s)	
Average Flow				
Mass balance at each node	mass flux in river at SW-001	M r1 =	251.6304 (mg/s)	
	mass flux in river at SW-002	M r2 =	464.0878 (mg/s)	
	mass flux in river at SW-003	M r3 =	528.9016 (mg/s)	
	mass flux in river at SW-004	M r4 =	769.9465 (mg/s)	
	mass flux in river at SW-004A	M r4A =	1,722.7541 (mg/s)	
	mass flux in river at SW-005	M r5 =	3,164.2566 (mg/s)	
	mass flux in river at USGS Gage	M r6 =	3,330.2684 (mg/s)	
mass flux into Colby Lake	M cl =	4,269.3331 (mg/s)		
Average Flow				
Convert mass flux to concentration	concentration in river at SW-001	C r1 =	1.55981 (mg/L)	
	concentration in river at SW-002	C r2 =	1.44472 (mg/L)	
	concentration in river at SW-003	C r3 =	1.42938 (mg/L)	
	concentration in river at SW-004	C r4 =	1.39919 (mg/L)	
	concentration in river at SW-004A	C r4A =	1.35942 (mg/L)	
	concentration in river at SW-005	C r5 =	1.34427 (mg/L)	
	concentration in river at USGS Gage	C r6 =	1.34449 (mg/L)	
concentration in Colby Lake	C cl =	1.33924 (mg/L)		

Partridge River Mass-Balance Model--Mine Site-Proposed Action - Proposed Action

Case	Year 1		
Parameter	Magnesium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	8.0000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	8.0000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	8.0000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	8.0000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	8.0000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	8.0000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	8.0000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	8.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	8.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	10.5000 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	8.0200 (mg/L)
	concentration of ground water into SW-002	C_g2 =	8.0200 (mg/L)
	concentration of ground water into SW-003	C_g3 =	8.0200 (mg/L)
	concentration of ground water into SW-004	C_g4 =	8.0200 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	8.0200 (mg/L)
	concentration of ground water into SW-005	C_g5 =	8.0200 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	8.0200 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	8.0200 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0263 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	43.8823 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	54.8820 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	67.9014 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	5.8496 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	4.8800 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	9.0100 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0263 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	43.8823 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_g3LOs =	54.8820 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	67.9014 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	5.8496 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	4.8800 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	4.8800 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	8.0200 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	8.0200 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	8.0200 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	44.6000 (mg/L)
Convert concentration to mass flux	Average Flow		
	mass flux of surface water into SW-001	M_s1 =	1,023.42074 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	40.85388 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	297.15000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	1,197.90882 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	81.56247 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	365.91826 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	24.48324 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00557 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00383 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00002 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	1,347.36600 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	73.28160 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00383 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00120 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00126 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	10.56098 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00005 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00003 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00001 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	2.61135 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00305 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00654 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	- (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	5,407.67522 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	315.83956 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	5.81218 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	4.90616 (mg/s)
	mass flux of surface water into SW-005	M_s5 =	8,178.95855 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	515.21282 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	878.36940 (mg/s)
mass flux of ground water into USGS Gage	M_g6 =	106.67402 (mg/s)	
mass flux of surface water into Colby Lake	M_scl =	5,333.98400 (mg/s)	
mass flux of ground water into Colby Lake	M_gcl =	265.55022 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M_shl =	88.29600 (mg/s)	
Mass balance at each node	Average Flow		
	mass flux in river at SW-001	M_r1 =	1,361.4246 (mg/s)
	mass flux in river at SW-002	M_r2 =	2,640.8959 (mg/s)
	mass flux in river at SW-003	M_r3 =	3,031.3068 (mg/s)
	mass flux in river at SW-004	M_r4 =	4,465.1427 (mg/s)
	mass flux in river at SW-004A	M_r4A =	10,199.3759 (mg/s)
	mass flux in river at SW-005	M_r5 =	18,893.5472 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	19,878.5906 (mg/s)
	mass flux into Colby Lake	M_cl =	25,566.4209 (mg/s)
Convert mass flux to concentration	Average Flow		
	concentration in river at SW-001	C_r1 =	8.43920 (mg/L)
	concentration in river at SW-002	C_r2 =	8.22120 (mg/L)
	concentration in river at SW-003	C_r3 =	8.19222 (mg/L)
	concentration in river at SW-004	C_r4 =	8.11429 (mg/L)
	concentration in river at SW-004A	C_r4A =	8.04829 (mg/L)
	concentration in river at SW-005	C_r5 =	8.02654 (mg/L)
	concentration in river at USGS Gage	C_r6 =	8.02533 (mg/L)
	concentration in Colby Lake	C_cl =	8.01989 (mg/L)

Partridge River Mass-Balance Model--Mine Site-Proposed Action - Proposed Action

Case	Year 1			
Parameter	Manganese			
Input concentration data	concentration of surface water into SW-001	C s1 =	0.1500 (mg/L)	
	concentration of surface water into SW-002	C s2 =	0.1500 (mg/L)	
	concentration of surface water into SW-003	C s3 =	0.1500 (mg/L)	
	concentration of surface water into SW-004	C s4 =	0.1500 (mg/L)	
	concentration of surface water into SW-004A	C s4A =	0.1500 (mg/L)	
	concentration of surface water into SW-005	C s5 =	0.1500 (mg/L)	
	concentration of surface water into USGS Gage	C s6 =	0.1500 (mg/L)	
	concentration of surface water into Colby Lake	C scl =	0.1500 (mg/L)	
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.1500 (mg/L)	
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0086 (mg/L)	
	concentration of West Pit overflow	C sms =	#N/A (mg/L)	
	concentration of ground water into SW-001	C g1 =	0.1240 (mg/L)	
	concentration of ground water into SW-002	C g2 =	0.1240 (mg/L)	
	concentration of ground water into SW-003	C g3 =	0.1240 (mg/L)	
	concentration of ground water into SW-004	C g4 =	0.1240 (mg/L)	
	concentration of ground water into SW-004A	C g4A =	0.1240 (mg/L)	
	concentration of ground water into SW-005	C g5 =	0.1240 (mg/L)	
	concentration of ground water into USGS Gage	C g6 =	0.1240 (mg/L)	
	concentration of ground water into Colby Lake	C gcl =	0.1240 (mg/L)	
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)	
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)	
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	0.0002 (mg/L)	
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	0.7500 (mg/L)	
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.7500 (mg/L)	
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	4.7661 (mg/L)	
	concentration of liner leakage from LOSP	C gC4LO =	0.4106 (mg/L)	
	concentration of seepage from Overburden (Storage)	C gOS =	0.1604 (mg/L)	
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	0.1160 (mg/L)	
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	0.0002 (mg/L)	
	concentration of liner leakage from Cat 3 sumps	C gC3s =	0.7500 (mg/L)	
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.7500 (mg/L)	
	concentration of liner leakage from Cat 4 sumps	C gC4s =	4.7661 (mg/L)	
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.4106 (mg/L)	
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.1604 (mg/L)	
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	0.1604 (mg/L)	
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.1240 (mg/L)	
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.1240 (mg/L)	
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.1240 (mg/L)	
	concentration of liner leakage from WWTF pond	C gWTFp =	0.8900 (mg/L)	
				Average Flow
	Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	19.18914 (mg/s)
		mass flux of ground water into SW-001	M g1 =	0.63166 (mg/s)
		mass flux of surface discharges from upstream of PM-1	M sns =	0.24338 (mg/s)
		mass flux of surface water into SW-002	M s2 =	22.46079 (mg/s)
		mass flux of ground water into SW-002	M g2 =	1.26107 (mg/s)
mass flux of surface water into SW-003		M s3 =	6.86097 (mg/s)	
mass flux of ground water into SW-003		M g3 =	0.37854 (mg/s)	
mass flux of seepage from East Pit to SW-003		M gep_003 =	#N/A (mg/s)	
mass flux of liner leakage from Cat 3 stockpile to SW-003		M gC3_003 =	0.00010 (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-003		M gC3LO_00 =	0.00005 (mg/s)	
mass flux of liner leakage from Cat 3 sumps to SW-003		M gC3s_003 =	0.00000 (mg/s)	
mass flux of surface water into SW-004		M s4 =	25.26311 (mg/s)	
mass flux of ground water into SW-004		M g4 =	1.13303 (mg/s)	
mass flux of seepage from East Pit to SW-004		M gep_004 =	#N/A (mg/s)	
mass flux of seepage from West Pit		M gwp =	#N/A (mg/s)	
mass flux of liner leakage from Cat 3 stockpile to SW-004		M gC3_004 =	- (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-004		M gC3LO_00 =	0.00005 (mg/s)	
mass flux of liner leakage from Cat 4 stockpile		M gC4 =	0.00008 (mg/s)	
mass flux of liner leakage from LOSP		M gC4LO =	0.00009 (mg/s)	
mass flux of seepage from Overburden (Storage)		M gOS =	0.34711 (mg/s)	
mass flux of liner leakage from Cat 3LO sumps to SW-004		M gC3LOs_0 =	0.00000 (mg/s)	
mass flux of liner leakage from Cat 4 sumps		M gC4s =	0.00000 (mg/s)	
mass flux of liner leakage from LOSP sumps		M gC4LOs =	0.00000 (mg/s)	
mass flux of seepage from Overburden Ponds - PW1		M gOp1 =	0.08583 (mg/s)	
mass flux of leakage from Haul Road Pond - PW2		M gHRp2 =	0.00005 (mg/s)	
mass flux of leakage from Haul Road Pond - PW4		M gHRp4 =	0.00010 (mg/s)	
mass flux of leakage from RTH Pond - PW3		M gRTHp =	0.00000 (mg/s)	
mass flux of liner leakage from WWTF pond		M gWTFp =	- (mg/s)	
mass flux of surface water into SW-004A		M s4A =	101.39391 (mg/s)	
mass flux of ground water into SW-004A		M g4A =	4.88330 (mg/s)	
mass flux of West Pit overflow		M sms =	#N/A (mg/s)	
mass flux of liner leakage from Cat 1/2 stockpile		M gC12 =	- (mg/s)	
mass flux of liner leakage from Cat 1/2 sumps		M gC12s =	0.00000 (mg/s)	
mass flux of seepage from Overburden (Cat 1/2)		M gO12 =	0.07483 (mg/s)	
mass flux of seepage from Overburden Pond - PW7		M gOp7 =	0.16125 (mg/s)	
mass flux of surface water into SW-005		M s5 =	153.35547 (mg/s)	
mass flux of ground water into SW-005		M g5 =	7.96588 (mg/s)	
mass flux of surface water into USGS Gage		M s6 =	16.46943 (mg/s)	
mass flux of ground water into USGS Gage		M g6 =	1.64932 (mg/s)	
mass flux of surface water into Colby Lake		M scl =	100.01220 (mg/s)	
mass flux of ground water into Colby Lake		M gcl =	4.10576 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP		M shl =	1.65555 (mg/s)	
			Average Flow	
Mass balance at each node		mass flux in river at SW-001	M r1 =	20.0642 (mg/s)
		mass flux in river at SW-002	M r2 =	43.7860 (mg/s)
	mass flux in river at SW-003	M r3 =	51.0257 (mg/s)	
	mass flux in river at SW-004	M r4 =	77.8551 (mg/s)	
	mass flux in river at SW-004A	M r4A =	184.3684 (mg/s)	
	mass flux in river at SW-005	M r5 =	345.6898 (mg/s)	
	mass flux in river at USGS Gage	M r6 =	363.8085 (mg/s)	
	mass flux into Colby Lake	M cl =	469.5821 (mg/s)	
Convert mass flux to concentration	concentration in river at SW-001	C r1 =	0.12437 (mg/L)	
	concentration in river at SW-002	C r2 =	0.13631 (mg/L)	
	concentration in river at SW-003	C r3 =	0.13790 (mg/L)	
	concentration in river at SW-004	C r4 =	0.14148 (mg/L)	
	concentration in river at SW-004A	C r4A =	0.14548 (mg/L)	
	concentration in river at SW-005	C r5 =	0.14686 (mg/L)	
	concentration in river at USGS Gage	C r6 =	0.14688 (mg/L)	
	concentration in Colby Lake	C cl =	0.14730 (mg/L)	



Partridge River Mass-Balance Model--Mine Site-Proposed Action - Proposed Action

Case	Year 1		
Parameter	Sodium		
Input concentration data	concentration of surface water into SW-001	C s1 =	2.5000 (mg/L)
	concentration of surface water into SW-002	C s2 =	2.5000 (mg/L)
	concentration of surface water into SW-003	C s3 =	2.5000 (mg/L)
	concentration of surface water into SW-004	C s4 =	2.5000 (mg/L)
	concentration of surface water into SW-004A	C s4A =	2.5000 (mg/L)
	concentration of surface water into SW-005	C s5 =	2.5000 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	2.5000 (mg/L)
	concentration of surface water into Colby Lake	C scl =	2.5000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	2.5000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	4.8000 (mg/L)
	concentration of West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	13.3300 (mg/L)
	concentration of ground water into SW-002	C g2 =	13.3300 (mg/L)
	concentration of ground water into SW-003	C g3 =	13.3300 (mg/L)
	concentration of ground water into SW-004	C g4 =	13.3300 (mg/L)
	concentration of ground water into SW-004A	C g4A =	13.3300 (mg/L)
	concentration of ground water into SW-005	C g5 =	13.3300 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	13.3300 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	13.3300 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	0.1473 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	145.4000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	181.8464 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	25.6574 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	2.2103 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	4.6000 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	7.1900 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	0.1473 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C gC3s =	145.4000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	181.8464 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	25.6574 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	2.2103 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	4.6000 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	4.6000 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	13.3300 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	13.3300 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	13.3300 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	97.0000 (mg/L)
Convert concentration to mass flux	Average Flow		
	mass flux of surface water into SW-001	M s1 =	319.81898 (mg/s)
	mass flux of ground water into SW-001	M g1 =	67.90302 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	135.84000 (mg/s)
	mass flux of surface water into SW-002	M s2 =	374.34650 (mg/s)
	mass flux of ground water into SW-002	M g2 =	135.56455 (mg/s)
	mass flux of surface water into SW-003	M s3 =	114.34946 (mg/s)
	mass flux of ground water into SW-003	M g3 =	40.69346 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M gC3_003 =	0.01845 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_00 =	0.01269 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M gC3s_003 =	0.00008 (mg/s)
	mass flux of surface water into SW-004	M s4 =	421.05187 (mg/s)
	mass flux of ground water into SW-004	M g4 =	121.80096 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_00 =	0.01269 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00045 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00048 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	9.95502 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_0 =	0.00018 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00001 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	2.46151 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00507 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.01087 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	- (mg/s)
	mass flux of surface water into SW-004A	M s4A =	1,689.89851 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	524.95529 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M gO12 =	4.63813 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	4.62466 (mg/s)
	mass flux of surface water into SW-005	M s5 =	2,555.92455 (mg/s)
	mass flux of ground water into SW-005	M g5 =	856.33253 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	274.49044 (mg/s)
mass flux of ground water into USGS Gage	M g6 =	177.30233 (mg/s)	
mass flux of surface water into Colby Lake	M scl =	1,666.87000 (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	441.36963 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	27.59250 (mg/s)	
Mass balance at each node	Average Flow		
	mass flux in river at SW-001	M r1 =	523.5620 (mg/s)
	mass flux in river at SW-002	M r2 =	1,033.4731 (mg/s)
	mass flux in river at SW-003	M r3 =	1,188.5472 (mg/s)
	mass flux in river at SW-004	M r4 =	1,743.8464 (mg/s)
	mass flux in river at SW-004A	M r4A =	3,967.9630 (mg/s)
	mass flux in river at SW-005	M r5 =	7,380.2200 (mg/s)
	mass flux in river at USGS Gage	M r6 =	7,832.0128 (mg/s)
	mass flux into Colby Lake	M cl =	9,967.8449 (mg/s)
Convert mass flux to concentration	Average Flow		
	concentration in river at SW-001	C r1 =	3.24546 (mg/L)
	concentration in river at SW-002	C r2 =	3.21724 (mg/L)
	concentration in river at SW-003	C r3 =	3.21209 (mg/L)
	concentration in river at SW-004	C r4 =	3.16901 (mg/L)
	concentration in river at SW-004A	C r4A =	3.13110 (mg/L)
	concentration in river at SW-005	C r5 =	3.13534 (mg/L)
	concentration in river at USGS Gage	C r6 =	3.16192 (mg/L)
	concentration in Colby Lake	C cl =	3.12680 (mg/L)



**Partridge River Mass-Balance Model--Mine Site-Proposed Action - Proposed Action**

Case		Year 1	
Parameter		Nickel	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0016 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0016 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0016 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0016 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0016 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0016 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0016 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0016 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0033 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0016 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0163 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0163 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0163 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0163 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0163 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0163 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0163 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0163 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0001 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.8600 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.8600 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	25.7594 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	2.2191 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0080 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0190 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0001 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.8600 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.8600 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	25.7594 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	2.2191 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0080 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	0.0080 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0163 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0163 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0163 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	2.9900 (mg/L)
		<b>Average Flow</b>	
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	0.19957 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.08293 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.04387 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	0.23359 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.16557 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.07135 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.04970 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00011 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00006 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.26274 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.14876 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00006 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00045 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00048 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.01725 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00001 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00426 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00001 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00001 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	- (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	1.05450 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.64113 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.01226 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	0.00801 (mg/s)
	mass flux of surface water into SW-005	M_s5 =	1.59490 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	1.04584 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.17128 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.21654 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	1.04013 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.53905 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.03642 (mg/s)
		<b>Average Flow</b>	
Mass balance at each node	mass flux in river at SW-001	M_r1 =	0.3264 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.7255 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.8467 (mg/s)
	mass flux in river at SW-004	M_r4 =	1.2808 (mg/s)
	mass flux in river at SW-004A	M_r4A =	2.9967 (mg/s)
	mass flux in river at SW-005	M_r5 =	5.6374 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	6.0252 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	7.6408 (mg/s)
			<b>Average Flow</b>
	concentration in river at SW-001	C_r1 =	0.00202 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00226 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00229 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00233 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00236 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00239 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00243 (mg/L)
	concentration in Colby Lake	C_cl =	0.00240 (mg/L)

**Partridge River Mass-Balance Model--Mine Site-Proposed Action - Proposed Action**

Case Parameter	Year 1 Lead		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0005 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0005 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0005 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0005 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0005 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0005 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0005 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0005 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0005 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0002 (mg/L)
	concentration of West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0011 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0011 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0011 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0011 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0011 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0011 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0011 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0011 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	0.0000 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	0.0065 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0082 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0326 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.0028 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0007 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	0.0000 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C gC3s =	0.0065 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.0082 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0326 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0028 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0007 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	0.0007 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0011 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0011 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0011 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	0.0100 (mg/L)
		Average Flow	
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	0.06396 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.00571 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.00425 (mg/s)
	mass flux of surface water into SW-002	M s2 =	0.07487 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.01139 (mg/s)
	mass flux of surface water into SW-003	M s3 =	0.02287 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.00342 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep 003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M gC3 003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO 00 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M gC3s 003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	0.08421 (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.01023 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep 004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M gC3 004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO 00 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.00146 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs 0 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.00036 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	- (mg/s)
	mass flux of surface water into SW-004A	M s4A =	0.33798 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.04411 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	0.00068 (mg/s)
	mass flux of surface water into SW-005	M s5 =	0.51118 (mg/s)
	mass flux of ground water into SW-005	M g5 =	0.07195 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	0.05490 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.01490 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	0.33337 (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	0.03708 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.00552 (mg/s)
		Average Flow	
Mass balance at each node	mass flux in river at SW-001	M r1 =	0.0739 (mg/s)
	mass flux in river at SW-002	M r2 =	0.1602 (mg/s)
	mass flux in river at SW-003	M r3 =	0.1865 (mg/s)
	mass flux in river at SW-004	M r4 =	0.2827 (mg/s)
	mass flux in river at SW-004A	M r4A =	0.6655 (mg/s)
	mass flux in river at SW-005	M r5 =	1.2486 (mg/s)
	mass flux in river at USGS Gage	M r6 =	1.3184 (mg/s)
mass flux into Colby Lake	M cl =	1.6944 (mg/s)	
		Average Flow	
Convert mass flux to concentration	concentration in river at SW-001	C r1 =	0.00046 (mg/L)
	concentration in river at SW-002	C r2 =	0.00050 (mg/L)
	concentration in river at SW-003	C r3 =	0.00050 (mg/L)
	concentration in river at SW-004	C r4 =	0.00051 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00053 (mg/L)
	concentration in river at SW-005	C r5 =	0.00053 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00053 (mg/L)
	concentration in Colby Lake	C cl =	0.00053 (mg/L)

**Partridge River Mass-Balance Model--Mine Site-Proposed Action - Proposed Action**

Case		Year 1	
Parameter		Antimony	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0015 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0015 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0015 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0015 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0015 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0015 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0015 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0015 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0015 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0015 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0015 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0015 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0015 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0015 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0015 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0015 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0015 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0015 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0003 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.0800 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0800 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0108 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0009 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0003 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0004 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0003 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.0800 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0800 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0108 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0009 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0003 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	0.0003 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0015 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0015 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0015 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0550 (mg/L)
		<b>Average Flow</b>	
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	0.19189 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00764 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.04245 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	0.22461 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.01525 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.06861 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00458 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.25263 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.01371 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00065 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00016 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	- (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	1.01394 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.05907 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.00026 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	0.00030 (mg/s)
	mass flux of surface water into SW-005	M_s5 =	1.53355 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.09636 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.16469 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.01995 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	1.00012 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.04967 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.01656 (mg/s)
		<b>Average Flow</b>	
Mass balance at each node	mass flux in river at SW-001	M_r1 =	0.2420 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.4818 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.5560 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.8222 (mg/s)
	mass flux in river at SW-004A	M_r4A =	1.8958 (mg/s)
	mass flux in river at SW-005	M_r5 =	3.5257 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	3.7103 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	4.7767 (mg/s)
			<b>Average Flow</b>
	concentration in river at SW-001	C_r1 =	0.00150 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00150 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00150 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00149 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00150 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00150 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00150 (mg/L)
	concentration in Colby Lake	C_cl =	0.00150 (mg/L)

Partridge River Mass-Balance Model--Mine Site-Proposed Action - Proposed Action

Case	Year 1		
Parameter	Selenium		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0005 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0005 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0005 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0005 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0005 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0005 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0005 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0005 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0005 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0005 (mg/L)
	concentration of West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0019 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0019 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0019 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0019 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0019 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0019 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0019 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0019 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	0.0000 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	0.0029 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0029 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0029 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.0024 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0004 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	0.0019 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	0.0000 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C gC3s =	0.0029 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.0029 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0029 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0024 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0004 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	0.0004 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0019 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0019 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0019 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	0.0074 (mg/L)
Convert concentration to mass flux	Average Flow		
	mass flux of surface water into SW-001	M s1 =	0.06396 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.00973 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.01415 (mg/s)
	mass flux of surface water into SW-002	M s2 =	0.07487 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.01942 (mg/s)
	mass flux of surface water into SW-003	M s3 =	0.02287 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.00583 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep 003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M gC3 003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO 00 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M gC3s 003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	0.08421 (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.01745 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep 004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M gC3 004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO 00 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.00096 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs 0 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.00024 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	- (mg/s)
	mass flux of surface water into SW-004A	M s4A =	0.33798 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.07522 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M gO12 =	0.00123 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	0.00045 (mg/s)
	mass flux of surface water into SW-005	M s5 =	0.51118 (mg/s)
	mass flux of ground water into SW-005	M g5 =	0.12270 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	0.05490 (mg/s)
mass flux of ground water into USGS Gage	M g6 =	0.02540 (mg/s)	
mass flux of surface water into Colby Lake	M scl =	0.33337 (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	0.06324 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.00552 (mg/s)	
Mass balance at each node	Average Flow		
	mass flux in river at SW-001	M r1 =	0.0878 (mg/s)
	mass flux in river at SW-002	M r2 =	0.1821 (mg/s)
	mass flux in river at SW-003	M r3 =	0.2108 (mg/s)
	mass flux in river at SW-004	M r4 =	0.3137 (mg/s)
	mass flux in river at SW-004A	M r4A =	0.7286 (mg/s)
	mass flux in river at SW-005	M r5 =	1.3625 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M r6 =	1.4428 (mg/s)
	mass flux into Colby Lake	M cl =	1.8449 (mg/s)
Convert mass flux to concentration	Average Flow		
	concentration in river at SW-001	C r1 =	0.00054 (mg/L)
	concentration in river at SW-002	C r2 =	0.00057 (mg/L)
	concentration in river at SW-003	C r3 =	0.00057 (mg/L)
	concentration in river at SW-004	C r4 =	0.00057 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00057 (mg/L)
	concentration in river at SW-005	C r5 =	0.00058 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00058 (mg/L)
concentration in Colby Lake	C cl =	0.00058 (mg/L)	

Partridge River Mass-Balance Model--Mine Site-Proposed Action - Proposed Action

Case Parameter	Year 1 Sulfate		
Input concentration data	concentration of surface water into SW-001	C s1 =	9.0000 (mg/L)
	concentration of surface water into SW-002	C s2 =	9.0000 (mg/L)
	concentration of surface water into SW-003	C s3 =	9.0000 (mg/L)
	concentration of surface water into SW-004	C s4 =	9.0000 (mg/L)
	concentration of surface water into SW-004A	C s4A =	9.0000 (mg/L)
	concentration of surface water into SW-005	C s5 =	9.0000 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	9.0000 (mg/L)
	concentration of surface water into Colby Lake	C scl =	9.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	22.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	22.0000 (mg/L)
	concentration of West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	16.1300 (mg/L)
	concentration of ground water into SW-002	C g2 =	16.1300 (mg/L)
	concentration of ground water into SW-003	C g3 =	16.1300 (mg/L)
	concentration of ground water into SW-004	C g4 =	16.1300 (mg/L)
	concentration of ground water into SW-004A	C g4A =	16.1300 (mg/L)
	concentration of ground water into SW-005	C g5 =	16.1300 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	16.1300 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	16.1300 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	0.3256 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	1,165.5191 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	1,457.6721 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	2,693.6897 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	232.0573 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	35.1700 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	68.3000 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	0.3256 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C gC3s =	1,165.5191 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	1,457.6721 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	2,693.6897 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	232.0573 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	35.1700 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	35.1700 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	16.1300 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	16.1300 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	16.1300 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	791.0000 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	1,151.34833 (mg/s)
	mass flux of ground water into SW-001	M g1 =	82.16622 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	622.60000 (mg/s)
	mass flux of surface water into SW-002	M s2 =	1,347.64742 (mg/s)
	mass flux of ground water into SW-002	M g2 =	164.04022 (mg/s)
	mass flux of surface water into SW-003	M s3 =	411.65804 (mg/s)
	mass flux of ground water into SW-003	M g3 =	49.24122 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep 003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M gC3 003 =	0.14793 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO 00 =	0.10170 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M gC3s 003 =	0.00061 (mg/s)
	mass flux of surface water into SW-004	M s4 =	1,515.78674 (mg/s)
	mass flux of ground water into SW-004	M g4 =	147.38556 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep 004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M gC3 004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO 00 =	0.10170 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.04752 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.04992 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	76.11262 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs 0 =	0.00143 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00123 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00021 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	18.81988 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00614 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.01315 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	- (mg/s)
	mass flux of surface water into SW-004A	M s4A =	6,083.63462 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	635.22346 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M gC12s =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M gO12 =	44.05903 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	35.35856 (mg/s)
	mass flux of surface water into SW-005	M s5 =	9,201.32837 (mg/s)
	mass flux of ground water into SW-005	M g5 =	1,036.20733 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	988.16557 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	214.54513 (mg/s)
mass flux of surface water into Colby Lake	M scl =	6,000.73200 (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	534.08043 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	99.33300 (mg/s)	
Mass balance at each node	Average Flow		
	mass flux in river at SW-001	M r1 =	1,856.1145 (mg/s)
	mass flux in river at SW-002	M r2 =	3,367.8022 (mg/s)
	mass flux in river at SW-003	M r3 =	3,828.9517 (mg/s)
	mass flux in river at SW-004	M r4 =	5,587.2784 (mg/s)
	mass flux in river at SW-004A	M r4A =	12,385.5541 (mg/s)
	mass flux in river at SW-005	M r5 =	22,623.0898 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M r6 =	23,825.8005 (mg/s)
	mass flux into Colby Lake	M cl =	30,459.9459 (mg/s)
Convert mass flux to concentration	Average Flow		
	concentration in river at SW-001	C r1 =	11.50568 (mg/L)
	concentration in river at SW-002	C r2 =	10.48408 (mg/L)
	concentration in river at SW-003	C r3 =	10.34788 (mg/L)
	concentration in river at SW-004	C r4 =	10.15349 (mg/L)
	concentration in river at SW-004A	C r4A =	9.77339 (mg/L)
	concentration in river at SW-005	C r5 =	9.61096 (mg/L)
	concentration in river at USGS Gage	C r6 =	9.61889 (mg/L)
	concentration in Colby Lake	C cl =	9.55493 (mg/L)



Partridge River Mass-Balance Model--Mine Site-Proposed Action - Proposed Action

Case	Year 1		
Parameter	Thallium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0004 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0004 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0004 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0004 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0004 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0004 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0004 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0004 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0004 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0003 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0000 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0000 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0000 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0000 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0000 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0000 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0000 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0000 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0000 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0001 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0001 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0000 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0000 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_g3LOs =	0.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0001 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0001 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0000 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	0.0000 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0000 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0000 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0000 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	0.0044 (mg/L)
Convert concentration to mass flux	Average Flow		
	mass flux of surface water into SW-001	M_s1 =	0.05117 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00002 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.00809 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	0.05990 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.00004 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.01830 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00001 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.06737 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.00004 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00009 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00002 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	- (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	0.27038 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.00016 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	0.00004 (mg/s)
	mass flux of surface water into SW-005	M_s5 =	0.40895 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.00026 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.04392 (mg/s)
mass flux of ground water into USGS Gage	M_g6 =	0.00005 (mg/s)	
mass flux of surface water into Colby Lake	M_scl =	0.26670 (mg/s)	
mass flux of ground water into Colby Lake	M_gcl =	0.00013 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00441 (mg/s)	
Mass balance at each node	Average Flow		
	mass flux in river at SW-001	M_r1 =	0.0593 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.1192 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.1375 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.2050 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.4756 (mg/s)
	mass flux in river at SW-005	M_r5 =	0.8848 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	0.9288 (mg/s)
	mass flux into Colby Lake	M_cl =	1.2000 (mg/s)
Convert mass flux to concentration	Average Flow		
	concentration in river at SW-001	C_r1 =	0.00037 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00037 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00037 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00037 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00038 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00038 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00037 (mg/L)
concentration in Colby Lake	C_cl =	0.00038 (mg/L)	



Partridge River Mass-Balance Model--Mine Site-Proposed Action - Proposed Action

Case	Year 1		
Parameter	Vanadium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0009 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0009 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0009 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0009 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0009 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0009 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0009 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0009 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0009 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0043 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0043 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0043 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0043 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0043 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0043 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0043 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0043 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0043 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.0928 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.1160 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0052 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0005 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0017 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0014 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.0928 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_g3LOs =	0.1160 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0052 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0005 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0017 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	0.0017 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0043 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0043 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0043 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0630 (mg/L)
Convert concentration to mass flux	Average Flow		
	mass flux of surface water into SW-001	M_s1 =	0.11513 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.02189 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.12169 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	0.14676 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.04373 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.04117 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.01313 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.15158 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.03929 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00374 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00093 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	- (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	0.60836 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.16934 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.00090 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	0.00174 (mg/s)
	mass flux of surface water into SW-005	M_s5 =	0.92013 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.27624 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.09882 (mg/s)
mass flux of ground water into USGS Gage	M_g6 =	0.05719 (mg/s)	
mass flux of surface water into Colby Lake	M_scl =	0.60007 (mg/s)	
mass flux of ground water into Colby Lake	M_gcl =	0.14238 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00993 (mg/s)	
Mass balance at each node	Average Flow		
	mass flux in river at SW-001	M_r1 =	0.2587 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.4372 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.4915 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.6871 (mg/s)
	mass flux in river at SW-004A	M_r4A =	1.4674 (mg/s)
	mass flux in river at SW-005	M_r5 =	2.6638 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	2.8198 (mg/s)
	mass flux into Colby Lake	M_cl =	3.5722 (mg/s)
Convert mass flux to concentration	Average Flow		
	concentration in river at SW-001	C_r1 =	0.00160 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00136 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00133 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00125 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00116 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00113 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00114 (mg/L)
	concentration in Colby Lake	C_cl =	0.00112 (mg/L)

Partridge River Mass-Balance Model--Mine Site-Proposed Action - Proposed Action

Case	Year 1			
Parameter	Zinc			
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0160 (mg/L)	
	concentration of surface water into SW-002	C s2 =	0.0160 (mg/L)	
	concentration of surface water into SW-003	C s3 =	0.0160 (mg/L)	
	concentration of surface water into SW-004	C s4 =	0.0160 (mg/L)	
	concentration of surface water into SW-004A	C s4A =	0.0160 (mg/L)	
	concentration of surface water into SW-005	C s5 =	0.0160 (mg/L)	
	concentration of surface water into USGS Gage	C s6 =	0.0160 (mg/L)	
	concentration of surface water into Colby Lake	C scl =	0.0160 (mg/L)	
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0620 (mg/L)	
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0073 (mg/L)	
	concentration of West Pit overflow	C sms =	#N/A (mg/L)	
	concentration of ground water into SW-001	C g1 =	0.0275 (mg/L)	
	concentration of ground water into SW-002	C g2 =	0.0275 (mg/L)	
	concentration of ground water into SW-003	C g3 =	0.0275 (mg/L)	
	concentration of ground water into SW-004	C g4 =	0.0275 (mg/L)	
	concentration of ground water into SW-004A	C g4A =	0.0275 (mg/L)	
	concentration of ground water into SW-005	C g5 =	0.0275 (mg/L)	
	concentration of ground water into USGS Gage	C g6 =	0.0275 (mg/L)	
	concentration of ground water into Colby Lake	C gcl =	0.0275 (mg/L)	
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)	
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)	
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	0.0002 (mg/L)	
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	0.0900 (mg/L)	
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0900 (mg/L)	
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	26.0000 (mg/L)	
	concentration of liner leakage from LOSP	C gC4LO =	2.3552 (mg/L)	
	concentration of seepage from Overburden (Storage)	C gOS =	0.0046 (mg/L)	
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	0.0030 (mg/L)	
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	0.0002 (mg/L)	
	concentration of liner leakage from Cat 3 sumps	C gC3s =	0.0900 (mg/L)	
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.0900 (mg/L)	
	concentration of liner leakage from Cat 4 sumps	C gC4s =	26.0000 (mg/L)	
	concentration of liner leakage from LOSP sumps	C gC4LOs =	2.3552 (mg/L)	
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0046 (mg/L)	
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	0.0046 (mg/L)	
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0275 (mg/L)	
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0275 (mg/L)	
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0275 (mg/L)	
	concentration of liner leakage from WWTF pond	C_gWTFp =	2.2100 (mg/L)	
	Convert concentration to mass flux	Average Flow		
		mass flux of surface water into SW-001	M s1 =	2.04684 (mg/s)
		mass flux of ground water into SW-001	M g1 =	0.14009 (mg/s)
mass flux of surface discharges from upstream of PM-1		M sns =	0.20744 (mg/s)	
mass flux of surface water into SW-002		M s2 =	2.39582 (mg/s)	
mass flux of ground water into SW-002		M g2 =	0.27967 (mg/s)	
mass flux of surface water into SW-003		M s3 =	0.73184 (mg/s)	
mass flux of ground water into SW-003		M g3 =	0.08395 (mg/s)	
mass flux of seepage from East Pit to SW-003		M gep_003 =	#N/A (mg/s)	
mass flux of liner leakage from Cat 3 stockpile to SW-003		M gC3_003 =	0.00001 (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-003		M gC3LO_00 =	0.00001 (mg/s)	
mass flux of liner leakage from Cat 3 sumps to SW-003		M gC3s_003 =	0.00000 (mg/s)	
mass flux of surface water into SW-004		M s4 =	2.69473 (mg/s)	
mass flux of ground water into SW-004		M g4 =	0.25128 (mg/s)	
mass flux of seepage from East Pit to SW-004		M gep_004 =	#N/A (mg/s)	
mass flux of seepage from West Pit		M gwp =	#N/A (mg/s)	
mass flux of liner leakage from Cat 3 stockpile to SW-004		M gC3_004 =	- (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-004		M gC3LO_00 =	0.00001 (mg/s)	
mass flux of liner leakage from Cat 4 stockpile		M gC4 =	0.00046 (mg/s)	
mass flux of liner leakage from LOSP		M gC4LO =	0.00051 (mg/s)	
mass flux of seepage from Overburden (Storage)		M gOS =	0.00987 (mg/s)	
mass flux of liner leakage from Cat 3LO sumps to SW-004		M gC3LOs_0 =	0.00000 (mg/s)	
mass flux of liner leakage from Cat 4 sumps		M gC4s =	0.00001 (mg/s)	
mass flux of liner leakage from LOSP sumps		M gC4LOs =	0.00000 (mg/s)	
mass flux of seepage from Overburden Ponds - PW1		M gOp1 =	0.00244 (mg/s)	
mass flux of leakage from Haul Road Pond - PW2		M gHRp2 =	0.00001 (mg/s)	
mass flux of leakage from Haul Road Pond - PW4		M gHRp4 =	0.00002 (mg/s)	
mass flux of leakage from RTH Pond - PW3		M gRTHp =	0.00000 (mg/s)	
mass flux of liner leakage from WWTF pond		M gWTFp =	- (mg/s)	
mass flux of surface water into SW-004A		M s4A =	10.81535 (mg/s)	
mass flux of ground water into SW-004A		M g4A =	1.08299 (mg/s)	
mass flux of West Pit overflow		M sms =	#N/A (mg/s)	
mass flux of liner leakage from Cat 1/2 stockpile		M gC12 =	- (mg/s)	
mass flux of liner leakage from Cat 1/2 sumps		M gC12s =	0.00000 (mg/s)	
mass flux of seepage from Overburden (Cat 1/2)		M gO12 =	0.00194 (mg/s)	
mass flux of seepage from Overburden Pond - PW7		M gOp7 =	0.00458 (mg/s)	
mass flux of surface water into SW-005		M s5 =	16.35792 (mg/s)	
mass flux of ground water into SW-005		M g5 =	1.76663 (mg/s)	
mass flux of surface water into USGS Gage		M s6 =	1.75674 (mg/s)	
mass flux of ground water into USGS Gage		M g6 =	0.36578 (mg/s)	
mass flux of surface water into Colby Lake		M scl =	10.66797 (mg/s)	
mass flux of ground water into Colby Lake		M gcl =	0.91055 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP		M shl =	0.68429 (mg/s)	
Mass balance at each node	Average Flow			
	mass flux in river at SW-001	M r1 =	2.3944 (mg/s)	
	mass flux in river at SW-002	M r2 =	5.0699 (mg/s)	
	mass flux in river at SW-003	M r3 =	5.8857 (mg/s)	
	mass flux in river at SW-004	M r4 =	8.8450 (mg/s)	
	mass flux in river at SW-004A	M r4A =	20.7499 (mg/s)	
	mass flux in river at SW-005	M r5 =	38.8744 (mg/s)	
	mass flux in river at USGS Gage	M r6 =	40.9969 (mg/s)	
	mass flux into Colby Lake	M cl =	53.2597 (mg/s)	
Convert mass flux to concentration	Average Flow			
	concentration in river at SW-001	C r1 =	0.01484 (mg/L)	
	concentration in river at SW-002	C r2 =	0.01578 (mg/L)	
	concentration in river at SW-003	C r3 =	0.01591 (mg/L)	
	concentration in river at SW-004	C r4 =	0.01607 (mg/L)	
	concentration in river at SW-004A	C r4A =	0.01637 (mg/L)	
	concentration in river at SW-005	C r5 =	0.01652 (mg/L)	
	concentration in river at USGS Gage	C r6 =	0.01655 (mg/L)	
	concentration in Colby Lake	C cl =	0.01671 (mg/L)	

## Partridge River Mass-Balance--Mine Site-Proposed Action

### FLOWS

Case Flow	Year 1 High Flow Conditions			
Total flow in Partridge River	flow in river at SW-001	Q_r1_H =	85.35	(cfs)
	flow in river at SW-002	Q_r2_H =	173.72	(cfs)
	flow in river at SW-003	Q_r3_H =	230.75	(cfs)
	flow in river at SW-004	Q_r4_H =	289.88	(cfs)
	flow in river at SW-004A	Q_r4a_H =	941.24	(cfs)
	flow in river at SW-005	Q_r5_H =	1,098.06	(cfs)
	flow in river at USGS Gage	Q_r6_H =	1,098.80	(cfs)
	total flow into Colby Lake	Q_cl_H =	1,436.33	(cfs)
	flow check	Q_ck_H =	1,436.33	(cfs)
Input flow data	surface water flow into SW-001	Q_s1_H =	84.17	(cfs)
	surface water flow into SW-002	Q_s2_H =	88.01	(cfs)
	surface water flow into SW-003	Q_s3_H =	56.92	(cfs)
	surface water flow into SW-004	Q_s4_H =	58.71	(cfs)
	surface water flow into SW-004A	Q_s4a_H =	649.86	(cfs)
	surface water flow into SW-005	Q_s5_H =	154.55	(cfs)
	surface water flow into USGS Gage	Q_s6_H =	0.27	(cfs)
	surface water flow into Colby Lake	Q_scl_H =	335.97	(cfs)
	surface water inflow from Hoyt Lakes WWTP	Q_shl_H =	0.39	(cfs)
	surface water inflow from discharges upstream of PM-1	Q_sns_H =	1.00	(cfs)
	surface water flow from West Pit overflow	Q_sms_H =	-	(cfs)
	ground water flow into SW-001	Q_g1_H =	0.18	(cfs)
	ground water flow into SW-002	Q_g2_H =	0.36	(cfs)
	ground water flow into SW-003	Q_g3_H =	0.11	(cfs)
	ground water flow into SW-004	Q_g4_H =	0.32	(cfs)
	ground water flow into SW-004A	Q_g4a_H =	1.39	(cfs)
	ground water flow into SW-005	Q_g5_H =	2.27	(cfs)
	ground water flow into USGS Gage	Q_g6_H =	0.47	(cfs)
	ground water flow into Colby Lake	Q_gcl_H =	1.17	(cfs)
	ground water seepage from East Pit to SW-003	Q_gep_003_H =	-	(cfs)
	ground water seepage from East Pit to SW-004	Q_gep_004_H =	-	(cfs)
	ground water seepage from West Pit	Q_gwp_H =	-	(cfs)
	ground water liner leakage from Cat 1/2 stockpile	Q_gC12_H =	-	(cfs)
	ground water liner leakage from Cat 3 stockpile to SW-003	Q_gC3_003_H =	0.0000	(cfs)
	ground water liner leakage from Cat 3 stockpile to SW-004	Q_gC3_004_H =	-	(cfs)
	ground water liner leakage from Cat 3LO stockpile to SW-003	Q_gC3LO_003_H =	0.0001	(cfs)
	ground water liner leakage from Cat 3LO stockpile to SW-004	Q_gC3LO_004_H =	0.0001	(cfs)
	ground water liner leakage from Cat 4 stockpile	Q_gC4_H =	0.0000	(cfs)
	ground water liner leakage from LO SP	Q_gC4LO_H =	0.0002	(cfs)
	ground water seepage from Overburden Storage	Q_gOS_H =	0.0765	(cfs)
	ground water seepage from Overburden (Cat 1/2)	Q_gO12_H =	0.0786	(cfs)
	ground water liner leakage from Cat 1/2 sumps	Q_gC12s_H =	0.0000	(cfs)
	ground water liner leakage from Cat 3 sumps	Q_gC3s_H =	0.0000	(cfs)
	ground water liner leakage from Cat 3LO sumps	Q_gC3LOs_H =	0.0000	(cfs)
	ground water liner leakage from Cat 4 sumps	Q_gC4s_H =	0.0000	(cfs)
	ground water liner leakage from LO SP sumps	Q_gC4LOs_H =	0.0000	(cfs)
	ground water seepage from Overburden pond - PW1	Q_gOp1_H =	0.0189	(cfs)
	ground water seepage from Overburden pond - PW7	Q_gOp7_H =	0.0355	(cfs)
	ground water leakage from Haul Road pond - PW2	Q_gHRp2_H =	0.0000	(cfs)
	ground water leakage from Haul Road pond - PW4	Q_gHRp4_H =	0.0000	(cfs)
	ground water leakage from RTH pond - PW3	Q_gRTHp_H =	0.0000	(cfs)
	ground water liner leakage from WWTF pond	Q_gWTFp_H =	-	(cfs)

Partridge River Mass-Balance--Mine Site-Proposed Action

Case	Year 1
Parameter	Silver
Input concentration data	concentration of surface water into SW-001
	concentration of surface water into SW-002
	concentration of surface water into SW-003
	concentration of surface water into SW-004
	concentration of surface water into SW-004A
	concentration of surface water into SW-005
	concentration of surface water into USGS Gage
	concentration of surface water into Colby Lake
	concentration of surface water inflow from Hoyt Lakes WWTP
	concentration of surface water discharges from upstream of PM-1
	concentration of West Pit overflow
	concentration of ground water into SW-001
	concentration of ground water into SW-002
	concentration of ground water into SW-003
	concentration of ground water into SW-004
	concentration of ground water into SW-004A
	concentration of ground water into SW-005
	concentration of ground water into USGS Gage
	concentration of ground water into Colby Lake
	concentration of ground water seepage from East Pit
	concentration of ground water seepage from West Pit
	concentration of liner leakage from Cat 1/2 stockpile
	concentration of liner leakage from Cat 3 stockpile
	concentration of liner leakage from Cat 3LO stockpile
	concentration of liner leakage from Cat 4 stockpile
	concentration of liner leakage from LOSP
	concentration of seepage from Overburden (Storage)
	concentration of seepage from Overburden (Cat 1/2)
	concentration of liner leakage from Cat 1/2 sumps
	concentration of liner leakage from Cat 3 sumps
	concentration of liner leakage from Cat 3LO sumps
	concentration of liner leakage from Cat 4 sumps
	concentration of liner leakage from LOSP sumps
	concentration of seepage from Overburden Ponds - PW1
	concentration of seepage from Overburden Pond - PW7
	concentration of leakage from Haul Road Pond - PW2
	concentration of leakage from Haul Road Pond - PW4
	concentration of leakage from RTH Pond - PW3
	concentration of liner leakage from WWTP pond
Convert concentration to mass flux	High Flow
	mass flux of surface water into SW-001
	mass flux of ground water into SW-001
	mass flux of surface discharges from upstream of PM-1
	mass flux of surface water into SW-002
	mass flux of ground water into SW-002
	mass flux of surface water into SW-003
	mass flux of ground water into SW-003
	mass flux of seepage from East Pit to SW-003
	mass flux of liner leakage from Cat 3 stockpile to SW-003
	mass flux of liner leakage from Cat 3LO stockpile to SW-003
	mass flux of liner leakage from Cat 3 sumps to SW-003
	mass flux of surface water into SW-004
	mass flux of ground water into SW-004
	mass flux of seepage from East Pit to SW-004
	mass flux of seepage from West Pit
	mass flux of liner leakage from Cat 3 stockpile to SW-004
	mass flux of liner leakage from Cat 3LO stockpile to SW-004
	mass flux of liner leakage from Cat 4 stockpile
	mass flux of liner leakage from LOSP
	mass flux of seepage from Overburden (Storage)
	mass flux of liner leakage from Cat 3LO sumps to SW-004
	mass flux of liner leakage from Cat 4 sumps
	mass flux of liner leakage from LOSP sumps
	mass flux of seepage from Overburden Ponds - PW1
	mass flux of leakage from Haul Road Pond - PW2
	mass flux of leakage from Haul Road Pond - PW4
	mass flux of leakage from RTH Pond - PW3
	mass flux of liner leakage from WWTP pond
	mass flux of surface water into SW-004A
	mass flux of ground water into SW-004A
	mass flux of West Pit overflow
	mass flux of liner leakage from Cat 1/2 stockpile
	mass flux of liner leakage from Cat 1/2 sumps
	mass flux of seepage from Overburden (Cat 1/2)
	mass flux of seepage from Overburden Pond - PW7
	mass flux of surface water into SW-005
	mass flux of ground water into SW-005
	mass flux of surface water into USGS Gage
	mass flux of ground water into USGS Gage
	mass flux of surface water into Colby Lake
	mass flux of ground water into Colby Lake
	mass flux of surface water from Hoyt Lakes WWTP
Mass balance at each node	High Flow
	mass flux in river at SW-001
	mass flux in river at SW-002
	mass flux in river at SW-003
	mass flux in river at SW-004
	mass flux in river at SW-004A
	mass flux in river at SW-005
Convert mass flux to concentration	High Flow
	concentration in river at SW-001
	concentration in river at SW-002
	concentration in river at SW-003
	concentration in river at SW-004
	concentration in river at SW-004A
	concentration in river at SW-005

Partridge River Mass-Balance--Mine Site-Proposed Action

Case	Year 1			
Parameter	Aluminum			
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0700 (mg/L)	
	concentration of surface water into SW-002	C_s2 =	0.0700 (mg/L)	
	concentration of surface water into SW-003	C_s3 =	0.0700 (mg/L)	
	concentration of surface water into SW-004	C_s4 =	0.0700 (mg/L)	
	concentration of surface water into SW-004A	C_s4A =	0.0700 (mg/L)	
	concentration of surface water into SW-005	C_s5 =	0.0700 (mg/L)	
	concentration of surface water into USGS Gage	C_s6 =	0.0700 (mg/L)	
	concentration of surface water into Colby Lake	C_scl =	0.0700 (mg/L)	
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0700 (mg/L)	
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0173 (mg/L)	
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)	
	concentration of ground water into SW-001	C_g1 =	0.1250 (mg/L)	
	concentration of ground water into SW-002	C_g2 =	0.1250 (mg/L)	
	concentration of ground water into SW-003	C_g3 =	0.1250 (mg/L)	
	concentration of ground water into SW-004	C_g4 =	0.1250 (mg/L)	
	concentration of ground water into SW-004A	C_g4A =	0.1250 (mg/L)	
	concentration of ground water into SW-005	C_g5 =	0.1250 (mg/L)	
	concentration of ground water into USGS Gage	C_g6 =	0.1250 (mg/L)	
	concentration of ground water into Colby Lake	C_gcl =	0.1250 (mg/L)	
	concentration of ground water seepage from East Pit	C_ggp =	#N/A (mg/L)	
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)	
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0074 (mg/L)	
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	1.6800 (mg/L)	
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	1.6800 (mg/L)	
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	18.7658 (mg/L)	
	concentration of liner leakage from LOSP	C_gC4LO =	1.6166 (mg/L)	
	concentration of seepage from Overburden (Storage)	C_gOS =	0.4106 (mg/L)	
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.1400 (mg/L)	
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0074 (mg/L)	
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	1.6800 (mg/L)	
	concentration of liner leakage from Cat 3LO sumps	C_g3LOs =	1.6800 (mg/L)	
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	18.7658 (mg/L)	
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	1.6166 (mg/L)	
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.4106 (mg/L)	
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	0.4106 (mg/L)	
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.1250 (mg/L)	
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.1250 (mg/L)	
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.1250 (mg/L)	
	concentration of liner leakage from WWTF ponc	C_gWTFp =	2.5500 (mg/L)	
	Convert concentration to mass flux	High Flow		
		mass flux of surface water into SW-001	M_s1 =	166.74077 (mg/s)
		mass flux of ground water into SW-001	M_g1 =	0.63675 (mg/s)
		mass flux of surface discharges from upstream of PM-1	M_sns =	0.48959 (mg/s)
mass flux of surface water into SW-002		M_s2 =	174.34190 (mg/s)	
mass flux of ground water into SW-002		M_g2 =	1.27124 (mg/s)	
mass flux of surface water into SW-003		M_s3 =	112.76331 (mg/s)	
mass flux of ground water into SW-003		M_g3 =	0.38160 (mg/s)	
mass flux of seepage from East Pit to SW-003		M_ggp_003 =	#N/A (mg/s)	
mass flux of liner leakage from Cat 3 stockpile to SW-003		M_gC3_003 =	0.00111 (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-003		M_gC3LO_00 =	0.00331 (mg/s)	
mass flux of liner leakage from Cat 3 sumps to SW-003		M_gC3s_003 =	0.00000 (mg/s)	
mass flux of surface water into SW-004		M_s4 =	116.30968 (mg/s)	
mass flux of ground water into SW-004		M_g4 =	1.14217 (mg/s)	
mass flux of seepage from East Pit to SW-004		M_ggp_004 =	#N/A (mg/s)	
mass flux of seepage from West Pit		M_gwp =	#N/A (mg/s)	
mass flux of liner leakage from Cat 3 stockpile to SW-004		M_gC3_004 =	- (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-004		M_gC3LO_00 =	0.00331 (mg/s)	
mass flux of liner leakage from Cat 4 stockpile		M_gC4 =	0.00936 (mg/s)	
mass flux of liner leakage from LOSP		M_gC4LO =	0.00983 (mg/s)	
mass flux of seepage from Overburden (Storage)		M_gOS =	0.88859 (mg/s)	
mass flux of liner leakage from Cat 3LO sumps to SW-004		M_gC3LOs_0 =	0.00000 (mg/s)	
mass flux of liner leakage from Cat 4 sumps		M_gC4s =	0.00001 (mg/s)	
mass flux of liner leakage from LOSP sumps		M_gC4LOs =	0.00000 (mg/s)	
mass flux of seepage from Overburden Ponds - PW1		M_gOp1 =	0.21972 (mg/s)	
mass flux of leakage from Haul Road Pond - PW2		M_gHRp2 =	0.00005 (mg/s)	
mass flux of leakage from Haul Road Pond - PW4		M_gHRp4 =	0.00010 (mg/s)	
mass flux of leakage from RTH Pond - PW3		M_gRTHp =	0.00000 (mg/s)	
mass flux of liner leakage from WWTF pond		M_gWTFp =	- (mg/s)	
mass flux of surface water into SW-004A		M_s4A =	1,287.37284 (mg/s)	
mass flux of ground water into SW-004A		M_g4A =	4.92269 (mg/s)	
mass flux of West Pit overflow		M_sms =	#N/A (mg/s)	
mass flux of liner leakage from Cat 1/2 stockpile		M_gC12 =	- (mg/s)	
mass flux of liner leakage from Cat 1/2 sumps		M_gC12s =	0.00000 (mg/s)	
mass flux of seepage from Overburden (Cat 1/2)		M_gO12 =	0.31160 (mg/s)	
mass flux of seepage from Overburden Pond - PW7		M_gOp7 =	0.41280 (mg/s)	
mass flux of surface water into SW-005		M_s5 =	306.15626 (mg/s)	
mass flux of ground water into SW-005		M_g5 =	8.03013 (mg/s)	
mass flux of surface water into USGS Gage		M_s6 =	0.54378 (mg/s)	
mass flux of ground water into USGS Gage		M_g6 =	1.66263 (mg/s)	
mass flux of surface water into Colby Lake		M_scl =	665.55657 (mg/s)	
mass flux of ground water into Colby Lake		M_gcl =	4.13888 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP		M_shl =	0.77259 (mg/s)	
Mass balance at each node	High Flow			
	mass flux in river at SW-001	M_r1 =	167.8671 (mg/s)	
	mass flux in river at SW-002	M_r2 =	343.4802 (mg/s)	
	mass flux in river at SW-003	M_r3 =	456.6296 (mg/s)	
	mass flux in river at SW-004	M_r4 =	575.2124 (mg/s)	
	mass flux in river at SW-004A	M_r4A =	1,868.2323 (mg/s)	
	mass flux in river at SW-005	M_r5 =	2,182.4187 (mg/s)	
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	2,184.6251 (mg/s)	
	mass flux into Colby Lake	M_cl =	2,855.0932 (mg/s)	
	High Flow			
	concentration in river at SW-001	C_r1 =	0.06950 (mg/L)	
	concentration in river at SW-002	C_r2 =	0.06987 (mg/L)	
	concentration in river at SW-003	C_r3 =	0.06993 (mg/L)	
	concentration in river at SW-004	C_r4 =	0.07012 (mg/L)	
	concentration in river at SW-004A	C_r4A =	0.07014 (mg/L)	
	concentration in river at SW-005	C_r5 =	0.07023 (mg/L)	
	concentration in river at USGS Gage	C_r6 =	0.07025 (mg/L)	
	concentration in Colby Lake	C_cl =	0.07160 (mg/L)	

Partridge River Mass-Balance--Mine Site-Proposed Action

Case	Year 1		
Parameter	Arsenic		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0021 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0021 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0021 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0021 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0021 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0021 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0021 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0021 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0021 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0065 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0022 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0022 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0022 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0022 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0022 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0022 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0022 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0022 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0004 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.2757 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.3448 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0205 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0018 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0016 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0027 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0004 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.2757 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_g3LOs =	0.3448 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0205 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0018 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0016 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	0.0016 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0022 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0022 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0022 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.2200 (mg/L)
High Flow			
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	5.02604 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.01100 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.18395 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	5.25516 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.02197 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	3.39901 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00659 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00018 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00068 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	3.50591 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.01974 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00068 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00001 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00338 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00083 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	- (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	38.80510 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.08506 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.00601 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	0.00157 (mg/s)
	mass flux of surface water into SW-005	M_s5 =	9.22842 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.13876 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.01639 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.02873 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	20.06178 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.07152 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.02329 (mg/s)
High Flow			
Mass balance at each node	mass flux in river at SW-001	M_r1 =	5.2210 (mg/s)
	mass flux in river at SW-002	M_r2 =	10.4981 (mg/s)
	mass flux in river at SW-003	M_r3 =	13.9046 (mg/s)
	mass flux in river at SW-004	M_r4 =	17.4351 (mg/s)
	mass flux in river at SW-004A	M_r4A =	56.3329 (mg/s)
	mass flux in river at SW-005	M_r5 =	65.7001 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	65.7452 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	85.9018 (mg/s)
	concentration in river at SW-001	C_r1 =	0.00216 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00214 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00213 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00213 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00211 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00211 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00211 (mg/L)
	concentration in Colby Lake	C_cl =	0.00213 (mg/L)



Partridge River Mass-Balance--Mine Site-Proposed Action

Case	Year 1		
Parameter	Boron		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0450 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0450 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0450 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0450 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0450 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0450 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0450 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0450 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0450 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0960 (mg/L)
	concentration of West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0870 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0870 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0870 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0870 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0870 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0870 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0870 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0870 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	0.0003 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	0.2798 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.3499 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.5914 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.0509 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0622 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	0.0370 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	0.0003 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C gC3s =	0.2798 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.3499 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.5914 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0509 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0622 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	0.0622 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0870 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0870 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0870 (mg/L)
	concentration of liner leakage from WWTF ponc	C gWTFp =	0.5000 (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M s1 =	107.19050 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.44318 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	2.71680 (mg/s)
	mass flux of surface water into SW-002	M s2 =	112.07694 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.88478 (mg/s)
	mass flux of surface water into SW-003	M s3 =	72.49070 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.26559 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M gC3_003 =	0.00018 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00069 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	74.77051 (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.79495 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00069 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00029 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00031 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.13461 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.03328 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00003 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00007 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	- (mg/s)
	mass flux of surface water into SW-004A	M s4A =	827.59682 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	3.42619 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M gO12 =	0.08235 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	0.06253 (mg/s)
	mass flux of surface water into SW-005	M s5 =	196.81474 (mg/s)
	mass flux of ground water into SW-005	M g5 =	5.58897 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	0.34957 (mg/s)
mass flux of ground water into USGS Gage	M g6 =	1.15719 (mg/s)	
mass flux of surface water into Colby Lake	M scl =	427.85780 (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	2.88066 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.49667 (mg/s)	
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M r1 =	110.3505 (mg/s)
	mass flux in river at SW-002	M r2 =	223.3122 (mg/s)
	mass flux in river at SW-003	M r3 =	296.0694 (mg/s)
	mass flux in river at SW-004	M r4 =	371.8041 (mg/s)
	mass flux in river at SW-004A	M r4A =	1,202.9720 (mg/s)
	mass flux in river at SW-005	M r5 =	1,405.3757 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M r6 =	1,406.8825 (mg/s)
	mass flux into Colby Lake	M cl =	1,838.1176 (mg/s)
	High Flow		
	concentration in river at SW-001	C r1 =	0.04569 (mg/L)
	concentration in river at SW-002	C r2 =	0.04542 (mg/L)
	concentration in river at SW-003	C r3 =	0.04534 (mg/L)
	concentration in river at SW-004	C r4 =	0.04532 (mg/L)
	concentration in river at SW-004A	C r4A =	0.04516 (mg/L)
	concentration in river at SW-005	C r5 =	0.04523 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.04524 (mg/L)
	concentration in Colby Lake	C cl =	0.04649 (mg/L)

Partridge River Mass-Balance--Mine Site-Proposed Action

Case	Year 1		
Parameter	Barium		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0077 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0077 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0077 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0077 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0077 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0077 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0077 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0077 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0077 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0050 (mg/L)
	concentration of West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0219 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0219 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0219 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0219 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0219 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0219 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0219 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0219 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	0.0007 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	0.1900 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.1900 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.1580 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.0136 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0168 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	0.0140 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	0.0007 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C gC3s =	0.1900 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.1900 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.1580 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0136 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0168 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	0.0168 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0219 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0219 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0219 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	0.1500 (mg/L)
Convert concentration to mass flux			High Flow
	mass flux of surface water into SW-001	M s1 =	18.29384 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.11166 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.14150 (mg/s)
	mass flux of surface water into SW-002	M s2 =	19.12780 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.22292 (mg/s)
	mass flux of surface water into SW-003	M s3 =	12.37175 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.06692 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep 003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M gC3 003 =	0.00013 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO 003 =	0.00037 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M gC3s 003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	12.76083 (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.20029 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep 004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M gC3 004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO 004 =	0.00037 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00008 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00008 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.03643 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs 004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.00901 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00001 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00002 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	- (mg/s)
	mass flux of surface water into SW-004A	M s4A =	141.24319 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.86324 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M gO12 =	0.03116 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	0.01692 (mg/s)
	mass flux of surface water into SW-005	M s5 =	33.58972 (mg/s)
	mass flux of ground water into SW-005	M g5 =	1.40816 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	0.05966 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.29156 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	73.02106 (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	0.72579 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.08476 (mg/s)
Mass balance at each node			High Flow
	mass flux in river at SW-001	M r1 =	18.5470 (mg/s)
	mass flux in river at SW-002	M r2 =	37.8977 (mg/s)
	mass flux in river at SW-003	M r3 =	50.3369 (mg/s)
	mass flux in river at SW-004	M r4 =	63.3440 (mg/s)
	mass flux in river at SW-004A	M r4A =	205.4985 (mg/s)
	mass flux in river at SW-005	M r5 =	240.4964 (mg/s)
	mass flux in river at USGS Gage	M r6 =	240.8476 (mg/s)
mass flux into Colby Lake	M cl =	314.6792 (mg/s)	
Convert mass flux to concentration			High Flow
	concentration in river at SW-001	C r1 =	0.00768 (mg/L)
	concentration in river at SW-002	C r2 =	0.00771 (mg/L)
	concentration in river at SW-003	C r3 =	0.00771 (mg/L)
	concentration in river at SW-004	C r4 =	0.00772 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00771 (mg/L)
	concentration in river at SW-005	C r5 =	0.00774 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00775 (mg/L)
	concentration in Colby Lake	C cl =	0.00810 (mg/L)

Partridge River Mass-Balance--Mine Site-Proposed Action

Case		Year 1	
Parameter		Beryllium	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0001 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0001 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0001 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0001 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0001 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0001 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0001 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0001 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0001 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0001 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0001 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0001 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0001 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0001 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0001 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0001 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0001 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0001 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0000 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0002 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0023 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0018 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	- (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0000 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0002 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0023 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0018 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	- (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	- (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0001 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0001 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0001 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0018 (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M_s1 =	0.23820 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00074 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.00283 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	0.24906 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.00147 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.16109 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00044 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.16616 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.00132 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	- (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	- (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	1.83910 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.00571 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	- (mg/s)
	mass flux of surface water into SW-005	M_s5 =	0.43737 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.00931 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.00078 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.00193 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	0.95080 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.00480 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00110 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	0.2418 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.4923 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.6598 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.8213 (mg/s)
	mass flux in river at SW-004A	M_r4A =	2.8661 (mg/s)
	mass flux in river at SW-005	M_r5 =	3.1128 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	3.1155 (mg/s)
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C_r1 =	0.00010 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00010 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00010 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00010 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00010 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00010 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00010 (mg/L)
	concentration in Colby Lake	C_cl =	0.00010 (mg/L)

Partridge River Mass-Balance--Mine Site-Proposed Action

Case	Year 1		
Parameter	Calcium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	17.0000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	17.0000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	17.0000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	17.0000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	17.0000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	17.0000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	17.0000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	17.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	17.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	24.5000 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	14.7900 (mg/L)
	concentration of ground water into SW-002	C_g2 =	14.7900 (mg/L)
	concentration of ground water into SW-003	C_g3 =	14.7900 (mg/L)
	concentration of ground water into SW-004	C_g4 =	14.7900 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	14.7900 (mg/L)
	concentration of ground water into SW-005	C_g5 =	14.7900 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	14.7900 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	14.7900 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.1007 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	180.3650 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	225.5759 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	41.6824 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	3.5909 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	9.3700 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	15.8000 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.1007 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	180.3650 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	225.5759 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	41.6824 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	3.5909 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	9.3700 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	9.3700 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	14.7900 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	14.7900 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	14.7900 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	179.0000 (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M_s1 =	40,494.18700 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	75.34026 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	693.35000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	42,340.17664 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	150.41258 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	27,385.37425 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	45.15051 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.11899 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.44485 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00009 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	28,246.63556 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	135.14150 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.44485 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.02078 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.02184 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	20.27794 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00022 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00002 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	5.01400 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00563 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.01206 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	- (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	312,647.68911 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	582.45226 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	35.16663 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	9.42024 (mg/s)
	mass flux of surface water into SW-005	M_s5 =	74,352.23551 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	950.12439 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	132.06163 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	196.72179 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	161,635.16700 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	489.71169 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	187.62900 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	41,262.8773 (mg/s)
	mass flux in river at SW-002	M_r2 =	83,753.4665 (mg/s)
	mass flux in river at SW-003	M_r3 =	111,184.5552 (mg/s)
	mass flux in river at SW-004	M_r4 =	139,592.1296 (mg/s)
	mass flux in river at SW-004A	M_r4A =	452,866.8579 (mg/s)
	mass flux in river at SW-005	M_r5 =	528,169.2178 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	528,498.0012 (mg/s)
	mass flux into Colby Lake	M_cl =	690,810.5089 (mg/s)
	High Flow		
	concentration in river at SW-001	C_r1 =	17.08321 (mg/L)
	concentration in river at SW-002	C_r2 =	17.03631 (mg/L)
	concentration in river at SW-003	C_r3 =	17.02638 (mg/L)
	concentration in river at SW-004	C_r4 =	17.01607 (mg/L)
	concentration in river at SW-004A	C_r4A =	17.00129 (mg/L)
	concentration in river at SW-005	C_r5 =	16.99654 (mg/L)
	concentration in river at USGS Gage	C_r6 =	16.99560 (mg/L)
	concentration in Colby Lake	C_cl =	16.96529 (mg/L)

Partridge River Mass-Balance--Mine Site-Proposed Action

Case	Year 1			
Parameter	Cadmium			
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0001 (mg/L)	
	concentration of surface water into SW-002	C s2 =	0.0001 (mg/L)	
	concentration of surface water into SW-003	C s3 =	0.0001 (mg/L)	
	concentration of surface water into SW-004	C s4 =	0.0001 (mg/L)	
	concentration of surface water into SW-004A	C s4A =	0.0001 (mg/L)	
	concentration of surface water into SW-005	C s5 =	0.0001 (mg/L)	
	concentration of surface water into USGS Gage	C s6 =	0.0001 (mg/L)	
	concentration of surface water into Colby Lake	C scl =	0.0001 (mg/L)	
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0001 (mg/L)	
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0001 (mg/L)	
	concentration of West Pit overflow	C sms =	#N/A (mg/L)	
	concentration of ground water into SW-001	C g1 =	0.0001 (mg/L)	
	concentration of ground water into SW-002	C g2 =	0.0001 (mg/L)	
	concentration of ground water into SW-003	C g3 =	0.0001 (mg/L)	
	concentration of ground water into SW-004	C g4 =	0.0001 (mg/L)	
	concentration of ground water into SW-004A	C g4A =	0.0001 (mg/L)	
	concentration of ground water into SW-005	C g5 =	0.0001 (mg/L)	
	concentration of ground water into USGS Gage	C g6 =	0.0001 (mg/L)	
	concentration of ground water into Colby Lake	C gcl =	0.0001 (mg/L)	
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)	
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)	
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	0.0000 (mg/L)	
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	0.0002 (mg/L)	
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0002 (mg/L)	
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0149 (mg/L)	
	concentration of liner leakage from LOSP	C gC4LO =	0.0104 (mg/L)	
	concentration of seepage from Overburden (Storage)	C gOS =	0.0001 (mg/L)	
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	- (mg/L)	
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	0.0000 (mg/L)	
	concentration of liner leakage from Cat 3 sumps	C gC3s =	0.0002 (mg/L)	
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.0002 (mg/L)	
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0149 (mg/L)	
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0104 (mg/L)	
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0001 (mg/L)	
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	0.0001 (mg/L)	
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0001 (mg/L)	
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0001 (mg/L)	
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0001 (mg/L)	
	concentration of liner leakage from WWTF ponc	C_gWTFp =	0.0069 (mg/L)	
	Convert concentration to mass flux	High Flow		
		mass flux of surface water into SW-001	M s1 =	0.23820 (mg/s)
		mass flux of ground water into SW-001	M g1 =	0.00051 (mg/s)
		mass flux of surface discharges from upstream of PM-1	M sns =	0.00283 (mg/s)
mass flux of surface water into SW-002		M s2 =	0.24906 (mg/s)	
mass flux of ground water into SW-002		M g2 =	0.00102 (mg/s)	
mass flux of surface water into SW-003		M s3 =	0.16109 (mg/s)	
mass flux of ground water into SW-003		M g3 =	0.00031 (mg/s)	
mass flux of seepage from East Pit to SW-003		M gep 003 =	#N/A (mg/s)	
mass flux of liner leakage from Cat 3 stockpile to SW-003		M gC3 003 =	0.00000 (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-003		M gC3LO 00 =	0.00000 (mg/s)	
mass flux of liner leakage from Cat 3 sumps to SW-003		M gC3s 003 =	0.00000 (mg/s)	
mass flux of surface water into SW-004		M s4 =	0.16616 (mg/s)	
mass flux of ground water into SW-004		M g4 =	0.00091 (mg/s)	
mass flux of seepage from East Pit to SW-004		M gep 004 =	#N/A (mg/s)	
mass flux of seepage from West Pit		M gwp =	#N/A (mg/s)	
mass flux of liner leakage from Cat 3 stockpile to SW-004		M gC3 004 =	- (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-004		M gC3LO 00 =	0.00000 (mg/s)	
mass flux of liner leakage from Cat 4 stockpile		M gC4 =	0.00001 (mg/s)	
mass flux of liner leakage from LOSP		M gC4LO =	0.00006 (mg/s)	
mass flux of seepage from Overburden (Storage)		M gOS =	0.00013 (mg/s)	
mass flux of liner leakage from Cat 3LO sumps to SW-004		M gC3LOs 0 =	0.00000 (mg/s)	
mass flux of liner leakage from Cat 4 sumps		M gC4s =	0.00000 (mg/s)	
mass flux of liner leakage from LOSP sumps		M gC4LOs =	0.00000 (mg/s)	
mass flux of seepage from Overburden Ponds - PW1		M gOp1 =	0.00003 (mg/s)	
mass flux of leakage from Haul Road Pond - PW2		M gHRp2 =	0.00000 (mg/s)	
mass flux of leakage from Haul Road Pond - PW4		M gHRp4 =	0.00000 (mg/s)	
mass flux of leakage from RTH Pond - PW3		M gRTHp =	0.00000 (mg/s)	
mass flux of liner leakage from WWTF pond		M gWTFp =	- (mg/s)	
mass flux of surface water into SW-004A		M s4A =	1.83910 (mg/s)	
mass flux of ground water into SW-004A		M g4A =	0.00394 (mg/s)	
mass flux of West Pit overflow		M sms =	#N/A (mg/s)	
mass flux of liner leakage from Cat 1/2 stockpile		M gC12 =	- (mg/s)	
mass flux of liner leakage from Cat 1/2 sumps		M gC12s =	0.00000 (mg/s)	
mass flux of seepage from Overburden (Cat 1/2)		M gO12 =	- (mg/s)	
mass flux of seepage from Overburden Pond - PW7		M gOp7 =	0.00006 (mg/s)	
mass flux of surface water into SW-005		M s5 =	0.43737 (mg/s)	
mass flux of ground water into SW-005		M g5 =	0.00642 (mg/s)	
mass flux of surface water into USGS Gage		M s6 =	0.00078 (mg/s)	
mass flux of ground water into USGS Gage		M g6 =	0.00133 (mg/s)	
mass flux of surface water into Colby Lake		M scl =	0.95080 (mg/s)	
mass flux of ground water into Colby Lake		M gcl =	0.00331 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP		M shl =	0.00110 (mg/s)	
Mass balance at each node	High Flow			
	mass flux in river at SW-001	M r1 =	0.2415 (mg/s)	
	mass flux in river at SW-002	M r2 =	0.4916 (mg/s)	
	mass flux in river at SW-003	M r3 =	0.6530 (mg/s)	
	mass flux in river at SW-004	M r4 =	0.8203 (mg/s)	
	mass flux in river at SW-004A	M r4A =	2.6634 (mg/s)	
	mass flux in river at SW-005	M r5 =	3.1072 (mg/s)	
	mass flux in river at USGS Gage	M r6 =	3.1093 (mg/s)	
	mass flux into Colby Lake	M cl =	4.0645 (mg/s)	
Convert mass flux to concentration	High Flow			
	concentration in river at SW-001	C r1 =	0.00010 (mg/L)	
	concentration in river at SW-002	C r2 =	0.00010 (mg/L)	
	concentration in river at SW-003	C r3 =	0.00010 (mg/L)	
	concentration in river at SW-004	C r4 =	0.00010 (mg/L)	
	concentration in river at SW-004A	C r4A =	0.00010 (mg/L)	
	concentration in river at SW-005	C r5 =	0.00010 (mg/L)	
	concentration in river at USGS Gage	C r6 =	0.00010 (mg/L)	
	concentration in Colby Lake	C cl =	0.00010 (mg/L)	

Partridge River Mass-Balance--Mine Site-Proposed Action

Case	Year 1		
Parameter	Chloride		
Input concentration data	concentration of surface water into SW-001	C s1 =	8.0000 (mg/L)
	concentration of surface water into SW-002	C s2 =	8.0000 (mg/L)
	concentration of surface water into SW-003	C s3 =	8.0000 (mg/L)
	concentration of surface water into SW-004	C s4 =	8.0000 (mg/L)
	concentration of surface water into SW-004A	C s4A =	8.0000 (mg/L)
	concentration of surface water into SW-005	C s5 =	8.0000 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	8.0000 (mg/L)
	concentration of surface water into Colby Lake	C scl =	8.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	8.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	1.6000 (mg/L)
	concentration of West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	6.6000 (mg/L)
	concentration of ground water into SW-002	C g2 =	6.6000 (mg/L)
	concentration of ground water into SW-003	C g3 =	6.6000 (mg/L)
	concentration of ground water into SW-004	C g4 =	6.6000 (mg/L)
	concentration of ground water into SW-004A	C g4A =	6.6000 (mg/L)
	concentration of ground water into SW-005	C g5 =	6.6000 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	6.6000 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	6.6000 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	0.0412 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	9.5257 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	11.9135 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	3.8030 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.3611 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	5.3500 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	2.3300 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	0.0412 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C gC3s =	9.5257 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	11.9135 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	3.8030 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.3611 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	5.3500 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	5.3500 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	6.6000 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	6.6000 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	6.6000 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	10.4000 (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M s1 =	19,056.08800 (mg/s)
	mass flux of ground water into SW-001	M g1 =	33.62040 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	45.28000 (mg/s)
	mass flux of surface water into SW-002	M s2 =	19,924.78901 (mg/s)
	mass flux of ground water into SW-002	M g2 =	67.12123 (mg/s)
	mass flux of surface water into SW-003	M s3 =	12,887.23494 (mg/s)
	mass flux of ground water into SW-003	M g3 =	20.14830 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep 003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M gC3 003 =	0.00628 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO 00 =	0.02349 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M gC3s 003 =	0.00001 (mg/s)
	mass flux of surface water into SW-004	M s4 =	13,292.53438 (mg/s)
	mass flux of ground water into SW-004	M g4 =	60.30655 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep 004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M gC3 004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO 00 =	0.02349 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00190 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00220 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	11.57812 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs 0 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	2.86285 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00251 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00538 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	- (mg/s)
	mass flux of surface water into SW-004A	M s4A =	147,128.32429 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	259.91785 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M gO12 =	5.18596 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	5.37868 (mg/s)
	mass flux of surface water into SW-005	M s5 =	34,989.28730 (mg/s)
	mass flux of ground water into SW-005	M g5 =	423.99060 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	62.14665 (mg/s)
mass flux of ground water into USGS Gage	M g6 =	87.78660 (mg/s)	
mass flux of surface water into Colby Lake	M scl =	76,063.60800 (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	218.53260 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	88.29600 (mg/s)	
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M r1 =	19,134.9884 (mg/s)
	mass flux in river at SW-002	M r2 =	39,126.8966 (mg/s)
	mass flux in river at SW-003	M r3 =	52,034.3117 (mg/s)
	mass flux in river at SW-004	M r4 =	65,401.6291 (mg/s)
	mass flux in river at SW-004A	M r4A =	212,800.4358 (mg/s)
	mass flux in river at SW-005	M r5 =	248,213.7137 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M r6 =	248,363.6470 (mg/s)
	mass flux into Colby Lake	M cl =	324,734.0836 (mg/s)
	High Flow		
	concentration in river at SW-001	C r1 =	7.92206 (mg/L)
	concentration in river at SW-002	C r2 =	7.95881 (mg/L)
	concentration in river at SW-003	C r3 =	7.96834 (mg/L)
	concentration in river at SW-004	C r4 =	7.97236 (mg/L)
	concentration in river at SW-004A	C r4A =	7.98884 (mg/L)
	concentration in river at SW-005	C r5 =	7.98754 (mg/L)
	concentration in river at USGS Gage	C r6 =	7.98695 (mg/L)
	concentration in Colby Lake	C cl =	7.92606 (mg/L)



Partridge River Mass-Balance--Mine Site-Proposed Action

Case	Year 1		
Parameter	Cobalt		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0005 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0005 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0005 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0005 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0005 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0005 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0005 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0005 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0005 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0005 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0017 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0017 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0017 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0017 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0017 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0017 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0017 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0017 (mg/L)
	concentration of ground water seepage from East Pit	C_ggp =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0000 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.0520 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0520 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	1.4673 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.1264 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0011 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0013 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0000 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.0520 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_g3LOs =	0.0520 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	1.4673 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.1264 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0011 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	0.0011 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0017 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0017 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0017 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	0.2000 (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M_s1 =	1.19101 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00841 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.01415 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	1.24530 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.01678 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.80545 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00504 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_ggp_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00003 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00010 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.83078 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.01508 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_ggp_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00010 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00073 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00077 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00240 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00059 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	- (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	9.19552 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.06498 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.00289 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	0.00112 (mg/s)
	mass flux of surface water into SW-005	M_s5 =	2.18683 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.10600 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.00388 (mg/s)
mass flux of ground water into USGS Gage	M_g6 =	0.02195 (mg/s)	
mass flux of surface water into Colby Lake	M_scl =	4.75398 (mg/s)	
mass flux of ground water into Colby Lake	M_gcl =	0.05463 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00552 (mg/s)	
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	1.2138 (mg/s)
	mass flux in river at SW-002	M_r2 =	2.4756 (mg/s)
	mass flux in river at SW-003	M_r3 =	3.2863 (mg/s)
	mass flux in river at SW-004	M_r4 =	4.1367 (mg/s)
	mass flux in river at SW-004A	M_r4A =	13.4012 (mg/s)
	mass flux in river at SW-005	M_r5 =	15.6941 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	15.7199 (mg/s)
	mass flux into Colby Lake	M_cl =	20.5340 (mg/s)
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C_r1 =	0.00050 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00050 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00050 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00050 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00050 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00051 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00051 (mg/L)
	concentration in Colby Lake	C_cl =	0.00053 (mg/L)

Partridge River Mass-Balance--Mine Site-Proposed Action

Case Parameter	Year 1 Copper		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0017 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0017 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0017 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0017 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0017 (mg/L)
	concentration of surface water into USGS Gage	C_s5 =	0.0017 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0017 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0017 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0190 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0012 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0030 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0030 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0030 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0030 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0030 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0030 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0030 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0030 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0001 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.0920 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0920 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.2648 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0228 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0214 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0170 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0001 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.0920 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0920 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.2648 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0228 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0214 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	0.0214 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0030 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0030 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0030 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0970 (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M_s1 =	4.04942 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.01503 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.03509 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	4.23402 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.03000 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	2.73854 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00901 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00006 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00018 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	2.82466 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.02696 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00018 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00013 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00014 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.04640 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.01147 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	- (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	31.26477 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.11618 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.03784 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	0.02155 (mg/s)
	mass flux of surface water into SW-005	M_s5 =	7.43522 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.18951 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.01321 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.03924 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	16.16352 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.09768 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.20970 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	4.0995 (mg/s)
	mass flux in river at SW-002	M_r2 =	8.3636 (mg/s)
	mass flux in river at SW-003	M_r3 =	11.1113 (mg/s)
	mass flux in river at SW-004	M_r4 =	14.0213 (mg/s)
	mass flux in river at SW-004A	M_r4A =	45.4616 (mg/s)
	mass flux in river at SW-005	M_r5 =	53.0864 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	53.1388 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	69.6097 (mg/s)
	High Flow		
	concentration in river at SW-001	C_r1 =	0.00170 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00170 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00170 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00171 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00171 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00171 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00171 (mg/L)
	concentration in Colby Lake	C_cl =	0.00178 (mg/L)

Partridge River Mass-Balance--Mine Site-Proposed Action

Case	Year 1			
Parameter	Fluoride			
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0700 (mg/L)	
	concentration of surface water into SW-002	C s2 =	0.0700 (mg/L)	
	concentration of surface water into SW-003	C s3 =	0.0700 (mg/L)	
	concentration of surface water into SW-004	C s4 =	0.0700 (mg/L)	
	concentration of surface water into SW-004A	C s4A =	0.0700 (mg/L)	
	concentration of surface water into SW-005	C s5 =	0.0700 (mg/L)	
	concentration of surface water into USGS Gage	C s6 =	0.0700 (mg/L)	
	concentration of surface water into Colby Lake	C scl =	0.0700 (mg/L)	
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0700 (mg/L)	
	concentration of surface water discharges from upstream of PM-1	C sns =	0.1400 (mg/L)	
	concentration of West Pit overflow	C sms =	#N/A (mg/L)	
	concentration of ground water into SW-001	C g1 =	0.2800 (mg/L)	
	concentration of ground water into SW-002	C g2 =	0.2800 (mg/L)	
	concentration of ground water into SW-003	C g3 =	0.2800 (mg/L)	
	concentration of ground water into SW-004	C g4 =	0.2800 (mg/L)	
	concentration of ground water into SW-004A	C g4A =	0.2800 (mg/L)	
	concentration of ground water into SW-005	C g5 =	0.2800 (mg/L)	
	concentration of ground water into USGS Gage	C g6 =	0.2800 (mg/L)	
	concentration of ground water into Colby Lake	C gcl =	0.2800 (mg/L)	
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)	
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)	
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	0.0030 (mg/L)	
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	0.0627 (mg/L)	
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0627 (mg/L)	
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0630 (mg/L)	
	concentration of liner leakage from LOSP	C gC4LO =	0.0631 (mg/L)	
	concentration of seepage from Overburden (Storage)	C gOS =	0.2239 (mg/L)	
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	0.4200 (mg/L)	
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	0.0030 (mg/L)	
	concentration of liner leakage from Cat 3 sumps	C gC3s =	0.0627 (mg/L)	
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.0627 (mg/L)	
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0630 (mg/L)	
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0631 (mg/L)	
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.2239 (mg/L)	
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	0.2239 (mg/L)	
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.2800 (mg/L)	
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.2800 (mg/L)	
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.2800 (mg/L)	
	concentration of liner leakage from WWTF pond	C_gWTFp =	1.9000 (mg/L)	
	Convert concentration to mass flux	High Flow		
		mass flux of surface water into SW-001	M s1 =	166.74077 (mg/s)
		mass flux of ground water into SW-001	M g1 =	1.42632 (mg/s)
		mass flux of surface discharges from upstream of PM-1	M sns =	3.96200 (mg/s)
mass flux of surface water into SW-002		M s2 =	174.34190 (mg/s)	
mass flux of ground water into SW-002		M g2 =	2.84757 (mg/s)	
mass flux of surface water into SW-003		M s3 =	112.76331 (mg/s)	
mass flux of ground water into SW-003		M g3 =	0.85478 (mg/s)	
mass flux of seepage from East Pit to SW-003		M gep 003 =	#N/A (mg/s)	
mass flux of liner leakage from Cat 3 stockpile to SW-003		M gC3 003 =	0.00004 (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-003		M gC3LO 00 =	0.00012 (mg/s)	
mass flux of liner leakage from Cat 3 sumps to SW-003		M gC3s 003 =	0.00000 (mg/s)	
mass flux of surface water into SW-004		M s4 =	116.30968 (mg/s)	
mass flux of ground water into SW-004		M g4 =	2.55846 (mg/s)	
mass flux of seepage from East Pit to SW-004		M gep 004 =	#N/A (mg/s)	
mass flux of seepage from West Pit		M gwp =	#N/A (mg/s)	
mass flux of liner leakage from Cat 3 stockpile to SW-004		M gC3 004 =	- (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-004		M gC3LO 00 =	0.00012 (mg/s)	
mass flux of liner leakage from Cat 4 stockpile		M gC4 =	0.00003 (mg/s)	
mass flux of liner leakage from LOSP		M gC4LO =	0.00038 (mg/s)	
mass flux of seepage from Overburden (Storage)		M gOS =	0.48453 (mg/s)	
mass flux of liner leakage from Cat 3LO sumps to SW-004		M gC3LOs 0 =	0.00000 (mg/s)	
mass flux of liner leakage from Cat 4 sumps		M gC4s =	0.00000 (mg/s)	
mass flux of liner leakage from LOSP sumps		M gC4LOs =	0.00000 (mg/s)	
mass flux of seepage from Overburden Ponds - PW1		M gOp1 =	0.11981 (mg/s)	
mass flux of leakage from Haul Road Pond - PW2		M gHRp2 =	0.00011 (mg/s)	
mass flux of leakage from Haul Road Pond - PW4		M gHRp4 =	0.00023 (mg/s)	
mass flux of leakage from RTH Pond - PW3		M gRTHp =	0.00000 (mg/s)	
mass flux of liner leakage from WWTF pond		M gWTFp =	- (mg/s)	
mass flux of surface water into SW-004A		M s4A =	1,287.37284 (mg/s)	
mass flux of ground water into SW-004A		M g4A =	11.02682 (mg/s)	
mass flux of West Pit overflow		M sms =	#N/A (mg/s)	
mass flux of liner leakage from Cat 1/2 stockpile		M gC12 =	- (mg/s)	
mass flux of liner leakage from Cat 1/2 sumps		M gC12s =	0.00000 (mg/s)	
mass flux of seepage from Overburden (Cat 1/2)		M gO12 =	0.93481 (mg/s)	
mass flux of seepage from Overburden Pond - PW7		M gOp7 =	0.22509 (mg/s)	
mass flux of surface water into SW-005		M s5 =	306.15626 (mg/s)	
mass flux of ground water into SW-005		M g5 =	17.98748 (mg/s)	
mass flux of surface water into USGS Gage		M s6 =	0.54378 (mg/s)	
mass flux of ground water into USGS Gage		M g6 =	3.72428 (mg/s)	
mass flux of surface water into Colby Lake		M scl =	665.55657 (mg/s)	
mass flux of ground water into Colby Lake		M gcl =	9.27108 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP		M shl =	0.77259 (mg/s)	
Mass balance at each node	High Flow			
	mass flux in river at SW-001	M r1 =	172.1291 (mg/s)	
	mass flux in river at SW-002	M r2 =	349.3186 (mg/s)	
	mass flux in river at SW-003	M r3 =	462.9368 (mg/s)	
	mass flux in river at SW-004	M r4 =	582.4102 (mg/s)	
	mass flux in river at SW-004A	M r4A =	1,881.9697 (mg/s)	
	mass flux in river at SW-005	M r5 =	2,206.1135 (mg/s)	
	mass flux in river at USGS Gage	M r6 =	2,210.3815 (mg/s)	
	mass flux into Colby Lake	M cl =	2,885.9818 (mg/s)	
Convert mass flux to concentration	High Flow			
	concentration in river at SW-001	C r1 =	0.07126 (mg/L)	
	concentration in river at SW-002	C r2 =	0.07105 (mg/L)	
	concentration in river at SW-003	C r3 =	0.07089 (mg/L)	
	concentration in river at SW-004	C r4 =	0.07099 (mg/L)	
	concentration in river at SW-004A	C r4A =	0.07065 (mg/L)	
	concentration in river at SW-005	C r5 =	0.07099 (mg/L)	
	concentration in river at USGS Gage	C r6 =	0.07108 (mg/L)	
	concentration in Colby Lake	C cl =	0.07668 (mg/L)	

Partridge River Mass-Balance--Mine Site-Proposed Action

Case	Year 1			
Parameter	Iron			
Input concentration data	concentration of surface water into SW-001	C_s1 =	1.6000 (mg/L)	
	concentration of surface water into SW-002	C_s2 =	1.6000 (mg/L)	
	concentration of surface water into SW-003	C_s3 =	1.6000 (mg/L)	
	concentration of surface water into SW-004	C_s4 =	1.6000 (mg/L)	
	concentration of surface water into SW-004A	C_s4A =	1.6000 (mg/L)	
	concentration of surface water into SW-005	C_s5 =	1.6000 (mg/L)	
	concentration of surface water into USGS Gage	C_s6 =	1.6000 (mg/L)	
	concentration of surface water into Colby Lake	C_scl =	1.6000 (mg/L)	
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	1.6000 (mg/L)	
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0300 (mg/L)	
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)	
	concentration of ground water into SW-001	C_g1 =	2.8440 (mg/L)	
	concentration of ground water into SW-002	C_g2 =	2.8440 (mg/L)	
	concentration of ground water into SW-003	C_g3 =	2.8440 (mg/L)	
	concentration of ground water into SW-004	C_g4 =	2.8440 (mg/L)	
	concentration of ground water into SW-004A	C_g4A =	2.8440 (mg/L)	
	concentration of ground water into SW-005	C_g5 =	2.8440 (mg/L)	
	concentration of ground water into USGS Gage	C_g6 =	2.8440 (mg/L)	
	concentration of ground water into Colby Lake	C_gcl =	2.8440 (mg/L)	
	concentration of ground water seepage from East Pit	C_ggp =	#N/A (mg/L)	
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)	
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0011 (mg/L)	
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.8100 (mg/L)	
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.8100 (mg/L)	
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	235.0000 (mg/L)	
	concentration of liner leakage from LOSP	C_gC4LO =	31.3573 (mg/L)	
	concentration of seepage from Overburden (Storage)	C_gOS =	0.2255 (mg/L)	
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.1500 (mg/L)	
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0011 (mg/L)	
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.8100 (mg/L)	
	concentration of liner leakage from Cat 3LO sumps	C_g3LOs =	0.8100 (mg/L)	
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	235.0000 (mg/L)	
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	31.3573 (mg/L)	
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.2255 (mg/L)	
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	0.2255 (mg/L)	
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	2.8440 (mg/L)	
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	2.8440 (mg/L)	
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	2.8440 (mg/L)	
	concentration of liner leakage from WWTF ponc	C_gWTFp =	29.4000 (mg/L)	
	Convert concentration to mass flux			High Flow
		mass flux of surface water into SW-001	M_s1 =	3,811.21760 (mg/s)
		mass flux of ground water into SW-001	M_g1 =	14.48734 (mg/s)
mass flux of surface discharges from upstream of PM-1		M_sns =	0.84900 (mg/s)	
mass flux of surface water into SW-002		M_s2 =	3,984.95780 (mg/s)	
mass flux of ground water into SW-002		M_g2 =	28.92315 (mg/s)	
mass flux of surface water into SW-003		M_s3 =	2,577.44699 (mg/s)	
mass flux of ground water into SW-003		M_g3 =	8.68209 (mg/s)	
mass flux of seepage from East Pit to SW-003		M_ggp_003 =	#N/A (mg/s)	
mass flux of liner leakage from Cat 3 stockpile to SW-003		M_gC3_003 =	0.00053 (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-003		M_gC3LO_00 =	0.00160 (mg/s)	
mass flux of liner leakage from Cat 3 sumps to SW-003		M_gC3s_003 =	0.00000 (mg/s)	
mass flux of surface water into SW-004		M_s4 =	2,658.50688 (mg/s)	
mass flux of ground water into SW-004		M_g4 =	25.98664 (mg/s)	
mass flux of seepage from East Pit to SW-004		M_ggp_004 =	#N/A (mg/s)	
mass flux of seepage from West Pit		M_gwp =	#N/A (mg/s)	
mass flux of liner leakage from Cat 3 stockpile to SW-004		M_gC3_004 =	- (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-004		M_gC3LO_00 =	0.00160 (mg/s)	
mass flux of liner leakage from Cat 4 stockpile		M_gC4 =	0.11717 (mg/s)	
mass flux of liner leakage from LOSP		M_gC4LO =	0.19068 (mg/s)	
mass flux of seepage from Overburden (Storage)		M_gOS =	0.48801 (mg/s)	
mass flux of liner leakage from Cat 3LO sumps to SW-004		M_gC3LOs_0 =	0.00000 (mg/s)	
mass flux of liner leakage from Cat 4 sumps		M_gC4s =	0.00011 (mg/s)	
mass flux of liner leakage from LOSP sumps		M_gC4LOs =	0.00003 (mg/s)	
mass flux of seepage from Overburden Ponds - PW1		M_gOp1 =	0.12067 (mg/s)	
mass flux of leakage from Haul Road Pond - PW2		M_gHRp2 =	0.00108 (mg/s)	
mass flux of leakage from Haul Road Pond - PW4		M_gHRp4 =	0.00232 (mg/s)	
mass flux of leakage from RTH Pond - PW3		M_gRTHp =	0.00000 (mg/s)	
mass flux of liner leakage from WWTF pond		M_gWTFp =	- (mg/s)	
mass flux of surface water into SW-004A		M_s4A =	29,425.66486 (mg/s)	
mass flux of ground water into SW-004A		M_g4A =	112.00096 (mg/s)	
mass flux of West Pit overflow		M_sms =	#N/A (mg/s)	
mass flux of liner leakage from Cat 1/2 stockpile		M_gC12 =	- (mg/s)	
mass flux of liner leakage from Cat 1/2 sumps		M_gC12s =	0.00000 (mg/s)	
mass flux of seepage from Overburden (Cat 1/2)		M_gO12 =	0.33386 (mg/s)	
mass flux of seepage from Overburden Pond - PW7		M_gOp7 =	0.22671 (mg/s)	
mass flux of surface water into SW-005		M_s5 =	6,997.85746 (mg/s)	
mass flux of ground water into SW-005		M_g5 =	182.70140 (mg/s)	
mass flux of surface water into USGS Gage		M_s6 =	12.42933 (mg/s)	
mass flux of ground water into USGS Gage		M_g6 =	37.82804 (mg/s)	
mass flux of surface water into Colby Lake		M_scl =	15,212.72160 (mg/s)	
mass flux of ground water into Colby Lake		M_gcl =	94.16768 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP		M_shl =	17.65920 (mg/s)	
Mass balance at each node			High Flow	
	mass flux in river at SW-001	M_r1 =	3,826.5539 (mg/s)	
	mass flux in river at SW-002	M_r2 =	7,840.4349 (mg/s)	
	mass flux in river at SW-003	M_r3 =	10,426.5661 (mg/s)	
	mass flux in river at SW-004	M_r4 =	13,111.9813 (mg/s)	
	mass flux in river at SW-004A	M_r4A =	42,650.2077 (mg/s)	
	mass flux in river at SW-005	M_r5 =	49,830.7665 (mg/s)	
	mass flux in river at USGS Gage	M_r6 =	49,881.0239 (mg/s)	
	mass flux into Colby Lake	M_cl =	65,205.5724 (mg/s)	
Convert mass flux to concentration			High Flow	
	concentration in river at SW-001	C_r1 =	1.58423 (mg/L)	
	concentration in river at SW-002	C_r2 =	1.59482 (mg/L)	
	concentration in river at SW-003	C_r3 =	1.59669 (mg/L)	
	concentration in river at SW-004	C_r4 =	1.59833 (mg/L)	
	concentration in river at SW-004A	C_r4A =	1.60115 (mg/L)	
	concentration in river at SW-005	C_r5 =	1.60356 (mg/L)	
	concentration in river at USGS Gage	C_r6 =	1.60409 (mg/L)	
	concentration in Colby Lake	C_cl =	1.62840 (mg/L)	

Partridge River Mass-Balance--Mine Site-Proposed Action

Case	Year 1		
Parameter	Hardness		
Input concentration data	concentration of surface water into SW-001	C_s1 =	110.0000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	110.0000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	110.0000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	110.0000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	110.0000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	110.0000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	110.0000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	110.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	110.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	110.0000 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	66.4200 (mg/L)
	concentration of ground water into SW-002	C_g2 =	66.4200 (mg/L)
	concentration of ground water into SW-003	C_g3 =	66.4200 (mg/L)
	concentration of ground water into SW-004	C_g4 =	66.4200 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	66.4200 (mg/L)
	concentration of ground water into SW-005	C_g5 =	66.4200 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	66.4200 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	66.4200 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.3263 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	575.4898 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	719.7440 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	298.4510 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	25.7111 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	43.5200 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	71.5000 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.3263 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	575.4898 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	719.7440 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	298.4510 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	25.7111 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	43.5200 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	43.5200 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	66.4200 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	66.4200 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	66.4200 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	629.0000 (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M_s1 =	262,021.21000 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	338.34348 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	3,113.00000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	273,965.84883 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	675.48367 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	177,199.48041 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	202.76516 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.37965 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	1.41937 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00030 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	182,772.34772 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	606.90322 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	1.41937 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.14881 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.15634 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	94.18314 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00071 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00014 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00002 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	23.28806 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.02527 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.05414 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00002 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	- (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	##### (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	2,615.71869 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	159.14011 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	43.75333 (mg/s)
	mass flux of surface water into SW-005	M_s5 =	481,102.70037 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	4,266.88722 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	854.51640 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	883.45242 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	##### (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	2,199.23262 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	1,214.07000 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	265,472.5535 (mg/s)
	mass flux in river at SW-002	M_r2 =	540,113.8860 (mg/s)
	mass flux in river at SW-003	M_r3 =	717,517.9309 (mg/s)
	mass flux in river at SW-004	M_r4 =	901,016.4581 (mg/s)
	mass flux in river at SW-004A	M_r4A =	2,926,849.5292 (mg/s)
	mass flux in river at SW-005	M_r5 =	3,412,219.1168 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	3,413.957,0856 (mg/s)
	mass flux into Colby Lake	M_cl =	4,463,244.9983 (mg/s)
	High Flow		
	concentration in river at SW-001	C_r1 =	109.90809 (mg/L)
	concentration in river at SW-002	C_r2 =	109.86469 (mg/L)
	concentration in river at SW-003	C_r3 =	109.87799 (mg/L)
	concentration in river at SW-004	C_r4 =	109.83255 (mg/L)
	concentration in river at SW-004A	C_r4A =	109.87827 (mg/L)
	concentration in river at SW-005	C_r5 =	109.80557 (mg/L)
	concentration in river at USGS Gage	C_r6 =	109.78706 (mg/L)
	concentration in Colby Lake	C_cl =	108.66565 (mg/L)

Partridge River Mass-Balance--Mine Site-Proposed Action

Case	Year 1		
Parameter	Potassium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	1.3000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	1.3000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	1.3000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	1.3000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	1.3000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	1.3000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	1.3000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	1.3000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	1.3000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	2.7000 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	1.7500 (mg/L)
	concentration of ground water into SW-002	C_g2 =	1.7500 (mg/L)
	concentration of ground water into SW-003	C_g3 =	1.7500 (mg/L)
	concentration of ground water into SW-004	C_g4 =	1.7500 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	1.7500 (mg/L)
	concentration of ground water into SW-005	C_g5 =	1.7500 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	1.7500 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	1.7500 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0616 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	49.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	49.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	37.7044 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	3.2482 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	2.2600 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	4.4500 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0616 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	49.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	49.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	37.7044 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	3.2482 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	2.2600 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	2.2600 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	1.7500 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	1.7500 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	1.7500 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	24.5000 (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M_s1 =	3,096.61430 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	8.91450 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	76.41000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	3,237.77821 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	17.79730 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	2,094.17568 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	5.34235 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.03233 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.09663 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00003 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	2,160.03684 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	15.99037 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.09663 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.01880 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.01975 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	4.89094 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00005 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00002 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	1.20935 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00067 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00143 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	- (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	23,908.35270 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	68.91761 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	9.90452 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	2.27212 (mg/s)
	mass flux of surface water into SW-005	M_s5 =	5,685.75919 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	112.42175 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	10.09883 (mg/s)
mass flux of ground water into USGS Gage	M_g6 =	23.27675 (mg/s)	
mass flux of surface water into Colby Lake	M_scl =	12,360.33630 (mg/s)	
mass flux of ground water into Colby Lake	M_gcl =	57.94425 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M_shl =	14.34810 (mg/s)	
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	3,181.9388 (mg/s)
	mass flux in river at SW-002	M_r2 =	6,437.5143 (mg/s)
	mass flux in river at SW-003	M_r3 =	8,537.1613 (mg/s)
	mass flux in river at SW-004	M_r4 =	10,719.4262 (mg/s)
	mass flux in river at SW-004A	M_r4A =	34,708.8731 (mg/s)
	mass flux in river at SW-005	M_r5 =	40,507.0541 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	40,540.4297 (mg/s)
	mass flux into Colby Lake	M_cl =	52,973.0583 (mg/s)
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C_r1 =	1.31735 (mg/L)
	concentration in river at SW-002	C_r2 =	1.30946 (mg/L)
	concentration in river at SW-003	C_r3 =	1.30735 (mg/L)
	concentration in river at SW-004	C_r4 =	1.30668 (mg/L)
	concentration in river at SW-004A	C_r4A =	1.30302 (mg/L)
	concentration in river at SW-005	C_r5 =	1.30352 (mg/L)
	concentration in river at USGS Gage	C_r6 =	1.30371 (mg/L)
	concentration in Colby Lake	C_cl =	1.32094 (mg/L)



Partridge River Mass-Balance--Mine Site-Proposed Action

Case		Year 1	
Parameter		Magnesium	
Input concentration data	concentration of surface water into SW-001	C_s1 =	8.0000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	8.0000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	8.0000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	8.0000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	8.0000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	8.0000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	8.0000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	8.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	8.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	10.5000 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	8.0200 (mg/L)
	concentration of ground water into SW-002	C_g2 =	8.0200 (mg/L)
	concentration of ground water into SW-003	C_g3 =	8.0200 (mg/L)
	concentration of ground water into SW-004	C_g4 =	8.0200 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	8.0200 (mg/L)
	concentration of ground water into SW-005	C_g5 =	8.0200 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	8.0200 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	8.0200 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0183 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	30.5455 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	38.2022 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	47.2647 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	4.0718 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	4.8800 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	9.0100 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0183 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	30.5455 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	38.2022 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	47.2647 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	4.0718 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	4.8800 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	4.8800 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	8.0200 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	8.0200 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	8.0200 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	44.6000 (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M_s1 =	19,056.08800 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	40.85388 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	297.15000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	19,924.78901 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	81.56247 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	12,887.23494 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	24.48324 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.02015 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.07534 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00002 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	13,292.53438 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	73.28160 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.07534 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.02357 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.02476 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	10.56098 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00004 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00002 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	2.61135 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00305 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00654 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	- (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	147,128.32429 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	315.83956 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	20.05388 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	4.90616 (mg/s)
	mass flux of surface water into SW-005	M_s5 =	34,989.28730 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	515.21282 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	62.14665 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	106.67402 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	76,063.60800 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	265.55022 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	88.29600 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	19,394.0919 (mg/s)
	mass flux in river at SW-002	M_r2 =	39,400.4434 (mg/s)
	mass flux in river at SW-003	M_r3 =	52,312.2570 (mg/s)
	mass flux in river at SW-004	M_r4 =	65,691.3767 (mg/s)
	mass flux in river at SW-004A	M_r4A =	213,160.5026 (mg/s)
	mass flux in river at SW-005	M_r5 =	248,665.0027 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	248,833.8233 (mg/s)
	mass flux into Colby Lake	M_cl =	325,251.2776 (mg/s)
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C_r1 =	8.02933 (mg/L)
	concentration in river at SW-002	C_r2 =	8.01445 (mg/L)
	concentration in river at SW-003	C_r3 =	8.01090 (mg/L)
	concentration in river at SW-004	C_r4 =	8.00768 (mg/L)
	concentration in river at SW-004A	C_r4A =	8.00236 (mg/L)
	concentration in river at SW-005	C_r5 =	8.00207 (mg/L)
	concentration in river at USGS Gage	C_r6 =	8.00207 (mg/L)
	concentration in Colby Lake	C_cl =	8.01060 (mg/L)

Partridge River Mass-Balance--Mine Site-Proposed Action

Case		Year 1	
Parameter		Manganese	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.1500 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.1500 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.1500 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.1500 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.1500 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.1500 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.1500 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.1500 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.1500 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0086 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.1240 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.1240 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.1240 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.1240 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.1240 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.1240 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.1240 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.1240 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0001 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.7500 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.7500 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	3.3176 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.2858 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.1604 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.1160 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0001 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.7500 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.7500 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	3.3176 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.2858 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.1604 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	0.1604 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.1240 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.1240 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.1240 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.8900 (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M_s1 =	357.30165 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.63166 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.24338 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	373.58979 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	1.26107 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	241.63566 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.37854 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00049 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00148 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	249.23502 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	1.13303 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00148 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00165 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00174 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.34711 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.08583 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00005 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00010 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	- (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	2,758.65608 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	4.88330 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.25819 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	0.16125 (mg/s)
	mass flux of surface water into SW-005	M_s5 =	656.04914 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	7.96588 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	1.16525 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	1.64932 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	1,426.19265 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	4.10576 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	1.65555 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	358.1767 (mg/s)
	mass flux in river at SW-002	M_r2 =	733.0275 (mg/s)
	mass flux in river at SW-003	M_r3 =	975.0437 (mg/s)
	mass flux in river at SW-004	M_r4 =	1,225.8497 (mg/s)
	mass flux in river at SW-004A	M_r4A =	3,989.8085 (mg/s)
	mass flux in river at SW-005	M_r5 =	4,653.8236 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	4,656.6361 (mg/s)
	mass flux into Colby Lake	M_cl =	6,088.5921 (mg/s)
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C_r1 =	0.14829 (mg/L)
	concentration in river at SW-002	C_r2 =	0.14911 (mg/L)
	concentration in river at SW-003	C_r3 =	0.14931 (mg/L)
	concentration in river at SW-004	C_r4 =	0.14943 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.14978 (mg/L)
	concentration in river at SW-005	C_r5 =	0.14976 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.14975 (mg/L)
	concentration in Colby Lake	C_cl =	0.14857 (mg/L)

Partridge River Mass-Balance--Mine Site-Proposed Action

Case	Year 1		
Parameter	Sodium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	2.5000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	2.5000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	2.5000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	2.5000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	2.5000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	2.5000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	2.5000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	2.5000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	2.5000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	4.8000 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	13.3300 (mg/L)
	concentration of ground water into SW-002	C_g2 =	13.3300 (mg/L)
	concentration of ground water into SW-003	C_g3 =	13.3300 (mg/L)
	concentration of ground water into SW-004	C_g4 =	13.3300 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	13.3300 (mg/L)
	concentration of ground water into SW-005	C_g5 =	13.3300 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	13.3300 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	13.3300 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.1025 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	101.2098 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	126.5794 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	17.8595 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	1.5386 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	4.6000 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	7.1900 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.1025 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	101.2098 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	126.5794 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	17.8595 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	1.5386 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	4.6000 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	4.6000 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	13.3300 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	13.3300 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	13.3300 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	97.0000 (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M_s1 =	5,955.02750 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	67.90302 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	135.84000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	6,226.49656 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	135.56455 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	4,027.26092 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	40.69346 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.06677 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.24962 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00005 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	4,153.91699 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	121.80096 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.24962 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00890 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00936 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	9.95502 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00012 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00001 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	2.46151 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00507 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.01087 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	- (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	45,977.60134 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	524.95529 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	16.00304 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	4.62466 (mg/s)
	mass flux of surface water into SW-005	M_s5 =	10,934.15228 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	856.33253 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	19.42083 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	177.30233 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	23,769.87750 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	441.36963 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	27.59250 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	6,158.7705 (mg/s)
	mass flux in river at SW-002	M_r2 =	12,520.8316 (mg/s)
	mass flux in river at SW-003	M_r3 =	16,589.1025 (mg/s)
	mass flux in river at SW-004	M_r4 =	20,877.5209 (mg/s)
	mass flux in river at SW-004A	M_r4A =	67,400.7053 (mg/s)
	mass flux in river at SW-005	M_r5 =	79,191.1901 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	79,387.9133 (mg/s)
	mass flux into Colby Lake	M_cl =	103,626.7529 (mg/s)
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C_r1 =	2.54979 (mg/L)
	concentration in river at SW-002	C_r2 =	2.54687 (mg/L)
	concentration in river at SW-003	C_r3 =	2.54039 (mg/L)
	concentration in river at SW-004	C_r4 =	2.54494 (mg/L)
	concentration in river at SW-004A	C_r4A =	2.53032 (mg/L)
	concentration in river at SW-005	C_r5 =	2.54838 (mg/L)
	concentration in river at USGS Gage	C_r6 =	2.55298 (mg/L)
	concentration in Colby Lake	C_cl =	2.83311 (mg/L)

Partridge River Mass-Balance--Mine Site-Proposed Action

Case	Year 1		
Parameter	Nickel		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0016 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0016 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0016 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0016 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0016 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0016 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0016 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0016 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0033 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0016 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0163 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0163 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0163 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0163 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0163 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0163 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0163 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0163 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0000 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.8600 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.8600 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	17.9306 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	1.5447 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0080 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0190 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0000 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.8600 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_g3LOs =	0.8600 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	17.9306 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	1.5447 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0080 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	0.0080 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0163 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0163 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0163 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	2.9900 (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M_s1 =	3.71594 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.08293 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.04387 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	3.88533 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.16557 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	2.51301 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.04970 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00057 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00170 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	2.59204 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.14876 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00170 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00894 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00939 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.01725 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00001 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00426 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00001 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00001 (mg/s)
mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)	
mass flux of liner leakage from WWTF pond	M_gWTFp =	- (mg/s)	
mass flux of surface water into SW-004A	M_s4A =	28.69002 (mg/s)	
mass flux of ground water into SW-004A	M_g4A =	0.64113 (mg/s)	
mass flux of West Pit overflow	M_sms =	#N/A (mg/s)	
mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	- (mg/s)	
mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)	
mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.04229 (mg/s)	
mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	0.00801 (mg/s)	
mass flux of surface water into SW-005	M_s5 =	6.82291 (mg/s)	
mass flux of ground water into SW-005	M_g5 =	1.04584 (mg/s)	
mass flux of surface water into USGS Gage	M_s6 =	0.01212 (mg/s)	
mass flux of ground water into USGS Gage	M_g6 =	0.21654 (mg/s)	
mass flux of surface water into Colby Lake	M_scl =	14.83240 (mg/s)	
mass flux of ground water into Colby Lake	M_gcl =	0.53905 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.03642 (mg/s)	
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	3.8427 (mg/s)
	mass flux in river at SW-002	M_r2 =	7.8936 (mg/s)
	mass flux in river at SW-003	M_r3 =	10.4586 (mg/s)
	mass flux in river at SW-004	M_r4 =	13.2410 (mg/s)
	mass flux in river at SW-004A	M_r4A =	42.6224 (mg/s)
	mass flux in river at SW-005	M_r5 =	50.4912 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	50.7198 (mg/s)
	mass flux into Colby Lake	M_cl =	66.1277 (mg/s)
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C_r1 =	0.00159 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00161 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00160 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00161 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00160 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00162 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00163 (mg/L)
	concentration in Colby Lake	C_cl =	0.00201 (mg/L)

Partridge River Mass-Balance--Mine Site-Proposed Action

Case Parameter	Year 1 Lead		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0005 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0005 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0005 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0005 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0005 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0005 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0005 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0005 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0005 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0002 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0011 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0011 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0011 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0011 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0011 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0011 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0011 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0011 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0000 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.0045 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0057 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0227 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0020 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0007 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0000 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.0045 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0057 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0227 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0020 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0007 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	0.0007 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0011 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0011 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0011 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0100 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	1.19101 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00571 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.00425 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	1.24530 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.01139 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.80545 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00342 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.83078 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.01023 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00001 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00146 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00036 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	- (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	9.19552 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.04411 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	0.00068 (mg/s)
	mass flux of surface water into SW-005	M_s5 =	2.18683 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.07195 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.00388 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.01490 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	4.75398 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.03708 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00552 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	1.2010 (mg/s)
	mass flux in river at SW-002	M_r2 =	2.4576 (mg/s)
	mass flux in river at SW-003	M_r3 =	3.2665 (mg/s)
	mass flux in river at SW-004	M_r4 =	4.1094 (mg/s)
	mass flux in river at SW-004A	M_r4A =	13.3497 (mg/s)
	mass flux in river at SW-005	M_r5 =	15.6085 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	15.6273 (mg/s)
	mass flux into Colby Lake	M_cl =	20.4238 (mg/s)
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C_r1 =	0.00050 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00050 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00050 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00050 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00050 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00050 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00050 (mg/L)
	concentration in Colby Lake	C_cl =	0.00052 (mg/L)



Partridge River Mass-Balance--Mine Site-Proposed Action

Case	Year 1		
Parameter	Antimony		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0015 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0015 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0015 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0015 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0015 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0015 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0015 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0015 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0015 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0015 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0015 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0015 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0015 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0015 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0015 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0015 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0015 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0015 (mg/L)
	concentration of ground water seepage from East Pit	C_ggp =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.0800 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0800 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0075 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0006 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0003 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0004 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.0800 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_g3LOs =	0.0800 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0075 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0006 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0003 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	0.0003 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0015 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0015 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0015 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	0.0550 (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M_s1 =	3.57302 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00764 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.04245 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	3.74290 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.01525 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	2.41636 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00458 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_ggp_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00005 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00016 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	2.49235 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.01371 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_ggp_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00016 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00065 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00016 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	- (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	27.58656 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.05907 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.00089 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	0.00030 (mg/s)
	mass flux of surface water into SW-005	M_s5 =	6.56049 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.09636 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.01165 (mg/s)
mass flux of ground water into USGS Gage	M_g6 =	0.01995 (mg/s)	
mass flux of surface water into Colby Lake	M_scl =	14.26193 (mg/s)	
mass flux of ground water into Colby Lake	M_gcl =	0.04967 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.01656 (mg/s)	
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	3.6231 (mg/s)
	mass flux in river at SW-002	M_r2 =	7.3743 (mg/s)
	mass flux in river at SW-003	M_r3 =	9.7954 (mg/s)
	mass flux in river at SW-004	M_r4 =	12.3024 (mg/s)
	mass flux in river at SW-004A	M_r4A =	39.9493 (mg/s)
	mass flux in river at SW-005	M_r5 =	46.6061 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	46.6377 (mg/s)
	mass flux into Colby Lake	M_cl =	60.9659 (mg/s)
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C_r1 =	0.00150 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00150 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00150 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00150 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00150 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00150 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00150 (mg/L)
	concentration in Colby Lake	C_cl =	0.00150 (mg/L)



Partridge River Mass-Balance--Mine Site-Proposed Action

Case	Year 1			
Parameter	Selenium			
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0005 (mg/L)	
	concentration of surface water into SW-002	C s2 =	0.0005 (mg/L)	
	concentration of surface water into SW-003	C s3 =	0.0005 (mg/L)	
	concentration of surface water into SW-004	C s4 =	0.0005 (mg/L)	
	concentration of surface water into SW-004A	C s4A =	0.0005 (mg/L)	
	concentration of surface water into SW-005	C s5 =	0.0005 (mg/L)	
	concentration of surface water into USGS Gage	C s6 =	0.0005 (mg/L)	
	concentration of surface water into Colby Lake	C scl =	0.0005 (mg/L)	
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0005 (mg/L)	
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0005 (mg/L)	
	concentration of West Pit overflow	C sms =	#N/A (mg/L)	
	concentration of ground water into SW-001	C g1 =	0.0019 (mg/L)	
	concentration of ground water into SW-002	C g2 =	0.0019 (mg/L)	
	concentration of ground water into SW-003	C g3 =	0.0019 (mg/L)	
	concentration of ground water into SW-004	C g4 =	0.0019 (mg/L)	
	concentration of ground water into SW-004A	C g4A =	0.0019 (mg/L)	
	concentration of ground water into SW-005	C g5 =	0.0019 (mg/L)	
	concentration of ground water into USGS Gage	C g6 =	0.0019 (mg/L)	
	concentration of ground water into Colby Lake	C gcl =	0.0019 (mg/L)	
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)	
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)	
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	0.0000 (mg/L)	
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	0.0029 (mg/L)	
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0029 (mg/L)	
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0029 (mg/L)	
	concentration of liner leakage from LOSP	C gC4LO =	0.0017 (mg/L)	
	concentration of seepage from Overburden (Storage)	C gOS =	0.0004 (mg/L)	
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	0.0019 (mg/L)	
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	0.0000 (mg/L)	
	concentration of liner leakage from Cat 3 sumps	C gC3s =	0.0029 (mg/L)	
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.0029 (mg/L)	
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0029 (mg/L)	
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0017 (mg/L)	
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0004 (mg/L)	
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	0.0004 (mg/L)	
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0019 (mg/L)	
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0019 (mg/L)	
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0019 (mg/L)	
	concentration of liner leakage from WWTF ponc	C_gWTFp =	0.0074 (mg/L)	
	Convert concentration to mass flux			High Flow
		mass flux of surface water into SW-001	M s1 =	1.19101 (mg/s)
		mass flux of ground water into SW-001	M g1 =	0.00973 (mg/s)
mass flux of surface discharges from upstream of PM-1		M sns =	0.01415 (mg/s)	
mass flux of surface water into SW-002		M s2 =	1.24530 (mg/s)	
mass flux of ground water into SW-002		M g2 =	0.01942 (mg/s)	
mass flux of surface water into SW-003		M s3 =	0.80545 (mg/s)	
mass flux of ground water into SW-003		M g3 =	0.00583 (mg/s)	
mass flux of seepage from East Pit to SW-003		M gep 003 =	#N/A (mg/s)	
mass flux of liner leakage from Cat 3 stockpile to SW-003		M gC3 003 =	0.00000 (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-003		M gC3LO 00 =	0.00001 (mg/s)	
mass flux of liner leakage from Cat 3 sumps to SW-003		M gC3s 003 =	0.00000 (mg/s)	
mass flux of surface water into SW-004		M s4 =	0.83078 (mg/s)	
mass flux of ground water into SW-004		M g4 =	0.01745 (mg/s)	
mass flux of seepage from East Pit to SW-004		M gep 004 =	#N/A (mg/s)	
mass flux of seepage from West Pit		M gwp =	#N/A (mg/s)	
mass flux of liner leakage from Cat 3 stockpile to SW-004		M gC3 004 =	- (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-004		M gC3LO 00 =	0.00001 (mg/s)	
mass flux of liner leakage from Cat 4 stockpile		M gC4 =	0.00000 (mg/s)	
mass flux of liner leakage from LOSP		M gC4LO =	0.00001 (mg/s)	
mass flux of seepage from Overburden (Storage)		M gOS =	0.00096 (mg/s)	
mass flux of liner leakage from Cat 3LO sumps to SW-004		M gC3LOs 0 =	0.00000 (mg/s)	
mass flux of liner leakage from Cat 4 sumps		M gC4s =	0.00000 (mg/s)	
mass flux of liner leakage from LOSP sumps		M gC4LOs =	0.00000 (mg/s)	
mass flux of seepage from Overburden Ponds - PW1		M gOp1 =	0.00024 (mg/s)	
mass flux of leakage from Haul Road Pond - PW2		M gHRp2 =	0.00000 (mg/s)	
mass flux of leakage from Haul Road Pond - PW4		M gHRp4 =	0.00000 (mg/s)	
mass flux of leakage from RTH Pond - PW3		M gRTHp =	0.00000 (mg/s)	
mass flux of liner leakage from WWTF pond		M gWTFp =	- (mg/s)	
mass flux of surface water into SW-004A		M s4A =	9.19552 (mg/s)	
mass flux of ground water into SW-004A		M g4A =	0.07522 (mg/s)	
mass flux of West Pit overflow		M sms =	#N/A (mg/s)	
mass flux of liner leakage from Cat 1/2 stockpile		M gC12 =	- (mg/s)	
mass flux of liner leakage from Cat 1/2 sumps		M gC12s =	0.00000 (mg/s)	
mass flux of seepage from Overburden (Cat 1/2)		M gO12 =	0.00423 (mg/s)	
mass flux of seepage from Overburden Pond - PW7		M gOp7 =	0.00045 (mg/s)	
mass flux of surface water into SW-005		M s5 =	2.18683 (mg/s)	
mass flux of ground water into SW-005		M g5 =	0.12270 (mg/s)	
mass flux of surface water into USGS Gage		M s6 =	0.00388 (mg/s)	
mass flux of ground water into USGS Gage		M g6 =	0.02540 (mg/s)	
mass flux of surface water into Colby Lake		M scl =	4.75398 (mg/s)	
mass flux of ground water into Colby Lake		M gcl =	0.06324 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP		M shl =	0.00552 (mg/s)	
Mass balance at each node			High Flow	
	mass flux in river at SW-001	M r1 =	1.2149 (mg/s)	
	mass flux in river at SW-002	M r2 =	2.4796 (mg/s)	
	mass flux in river at SW-003	M r3 =	3.2909 (mg/s)	
	mass flux in river at SW-004	M r4 =	4.1404 (mg/s)	
	mass flux in river at SW-004A	M r4A =	13.4158 (mg/s)	
	mass flux in river at SW-005	M r5 =	15.7253 (mg/s)	
	mass flux in river at USGS Gage	M r6 =	15.7546 (mg/s)	
	mass flux into Colby Lake	M cl =	20.5773 (mg/s)	
Convert mass flux to concentration			High Flow	
	concentration in river at SW-001	C r1 =	0.00050 (mg/L)	
	concentration in river at SW-002	C r2 =	0.00050 (mg/L)	
	concentration in river at SW-003	C r3 =	0.00050 (mg/L)	
	concentration in river at SW-004	C r4 =	0.00050 (mg/L)	
	concentration in river at SW-004A	C r4A =	0.00050 (mg/L)	
	concentration in river at SW-005	C r5 =	0.00051 (mg/L)	
	concentration in river at USGS Gage	C r6 =	0.00051 (mg/L)	
	concentration in Colby Lake	C cl =	0.00054 (mg/L)	

Partridge River Mass-Balance--Mine Site-Proposed Action

Case	Year 1		
Parameter	sulfate		
Input concentration data	concentration of surface water into SW-001	C s1 =	9.0000 (mg/L)
	concentration of surface water into SW-002	C s2 =	9.0000 (mg/L)
	concentration of surface water into SW-003	C s3 =	9.0000 (mg/L)
	concentration of surface water into SW-004	C s4 =	9.0000 (mg/L)
	concentration of surface water into SW-004A	C s4A =	9.0000 (mg/L)
	concentration of surface water into SW-005	C s5 =	9.0000 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	9.0000 (mg/L)
	concentration of surface water into Colby Lake	C scl =	9.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	9.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	22.0000 (mg/L)
	concentration of West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	16.1300 (mg/L)
	concentration of ground water into SW-002	C g2 =	16.1300 (mg/L)
	concentration of ground water into SW-003	C g3 =	16.1300 (mg/L)
	concentration of ground water into SW-004	C g4 =	16.1300 (mg/L)
	concentration of ground water into SW-004A	C g4A =	16.1300 (mg/L)
	concentration of ground water into SW-005	C g5 =	16.1300 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	16.1300 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	16.1300 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	0.2265 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	811.2927 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	1,014.6541 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	1,875.0193 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	161.5301 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	35.1700 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	68.3000 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	0.2265 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C gC3s =	811.2927 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	1,014.6541 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	1,875.0193 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	161.5301 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	35.1700 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	35.1700 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	16.1300 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	16.1300 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	16.1300 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	791.0000 (mg/L)
Convert concentration to mass flux			High Flow
	mass flux of surface water into SW-001	M s1 =	21,438.09900 (mg/s)
	mass flux of ground water into SW-001	M g1 =	82.16622 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	622.60000 (mg/s)
	mass flux of surface water into SW-002	M s2 =	22,415.38763 (mg/s)
	mass flux of ground water into SW-002	M g2 =	164.04022 (mg/s)
	mass flux of surface water into SW-003	M s3 =	14,498.13931 (mg/s)
	mass flux of ground water into SW-003	M g3 =	49.24122 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep 003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M gC3_003 =	0.53521 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_00 =	2.00094 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M gC3s_003 =	0.00043 (mg/s)
	mass flux of surface water into SW-004	M s4 =	14,954.10118 (mg/s)
	mass flux of ground water into SW-004	M g4 =	147.38556 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep 004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_00 =	2.00094 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.93489 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.98222 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	76.11262 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_0 =	0.00100 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00085 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00015 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	18.81988 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00614 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.01315 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	- (mg/s)
	mass flux of surface water into SW-004A	M s4A =	165,519.36482 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	635.22346 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M gO12 =	152.01776 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	35.35856 (mg/s)
	mass flux of surface water into SW-005	M s5 =	39,362.94821 (mg/s)
	mass flux of ground water into SW-005	M g5 =	1,036.20733 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	69.91498 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	214.54513 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	85,571.55900 (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	534.08043 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl =	99.33300 (mg/s)
Mass balance at each node			High Flow
	mass flux in river at SW-001	M r1 =	22,142.8652 (mg/s)
	mass flux in river at SW-002	M r2 =	44,722.2931 (mg/s)
	mass flux in river at SW-003	M r3 =	59,272.2102 (mg/s)
	mass flux in river at SW-004	M r4 =	74,472.5692 (mg/s)
	mass flux in river at SW-004A	M r4A =	240,814.5338 (mg/s)
	mass flux in river at SW-005	M r5 =	281,213.6893 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M r6 =	281,498.1494 (mg/s)
	mass flux into Colby Lake	M cl =	367,703.1219 (mg/s)
			High Flow
	concentration in river at SW-001	C r1 =	9.16735 (mg/L)
	concentration in river at SW-002	C r2 =	9.09697 (mg/L)
	concentration in river at SW-003	C r3 =	9.07672 (mg/L)
	concentration in river at SW-004	C r4 =	9.07809 (mg/L)
	concentration in river at SW-004A	C r4A =	9.04053 (mg/L)
	concentration in river at SW-005	C r5 =	9.04949 (mg/L)
	concentration in river at USGS Gage	C r6 =	9.05250 (mg/L)
	concentration in Colby Lake	C cl =	9.29691 (mg/L)

Partridge River Mass-Balance--Mine Site-Proposed Action

Case	Year 1			
Parameter	Thallium			
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0004 (mg/L)	
	concentration of surface water into SW-002	C_s2 =	0.0004 (mg/L)	
	concentration of surface water into SW-003	C_s3 =	0.0004 (mg/L)	
	concentration of surface water into SW-004	C_s4 =	0.0004 (mg/L)	
	concentration of surface water into SW-004A	C_s4A =	0.0004 (mg/L)	
	concentration of surface water into SW-005	C_s5 =	0.0004 (mg/L)	
	concentration of surface water into USGS Gage	C_s6 =	0.0004 (mg/L)	
	concentration of surface water into Colby Lake	C_scl =	0.0004 (mg/L)	
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0004 (mg/L)	
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0003 (mg/L)	
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)	
	concentration of ground water into SW-001	C_g1 =	0.0000 (mg/L)	
	concentration of ground water into SW-002	C_g2 =	0.0000 (mg/L)	
	concentration of ground water into SW-003	C_g3 =	0.0000 (mg/L)	
	concentration of ground water into SW-004	C_g4 =	0.0000 (mg/L)	
	concentration of ground water into SW-004A	C_g4A =	0.0000 (mg/L)	
	concentration of ground water into SW-005	C_g5 =	0.0000 (mg/L)	
	concentration of ground water into USGS Gage	C_g6 =	0.0000 (mg/L)	
	concentration of ground water into Colby Lake	C_gcl =	0.0000 (mg/L)	
	concentration of ground water seepage from East Pit	C_ggp =	#N/A (mg/L)	
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)	
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0000 (mg/L)	
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.0000 (mg/L)	
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0000 (mg/L)	
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0001 (mg/L)	
	concentration of liner leakage from LOSP	C_gC4LO =	0.0000 (mg/L)	
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0000 (mg/L)	
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	- (mg/L)	
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0000 (mg/L)	
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.0000 (mg/L)	
	concentration of liner leakage from Cat 3LO sumps	C_g3LOs =	0.0000 (mg/L)	
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0001 (mg/L)	
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0000 (mg/L)	
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0000 (mg/L)	
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	0.0000 (mg/L)	
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0000 (mg/L)	
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0000 (mg/L)	
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0000 (mg/L)	
	concentration of liner leakage from WWTF ponc	C_gWTFp =	0.0044 (mg/L)	
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Partridge River Mass-Balance--Mine Site-Proposed Action

Case	Year 1			
Parameter	Vanadium			
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0009 (mg/L)	
	concentration of surface water into SW-002	C_s2 =	0.0009 (mg/L)	
	concentration of surface water into SW-003	C_s3 =	0.0009 (mg/L)	
	concentration of surface water into SW-004	C_s4 =	0.0009 (mg/L)	
	concentration of surface water into SW-004A	C_s4A =	0.0009 (mg/L)	
	concentration of surface water into SW-005	C_s5 =	0.0009 (mg/L)	
	concentration of surface water into USGS Gage	C_s6 =	0.0009 (mg/L)	
	concentration of surface water into Colby Lake	C_scl =	0.0009 (mg/L)	
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0009 (mg/L)	
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0043 (mg/L)	
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)	
	concentration of ground water into SW-001	C_g1 =	0.0043 (mg/L)	
	concentration of ground water into SW-002	C_g2 =	0.0043 (mg/L)	
	concentration of ground water into SW-003	C_g3 =	0.0043 (mg/L)	
	concentration of ground water into SW-004	C_g4 =	0.0043 (mg/L)	
	concentration of ground water into SW-004A	C_g4A =	0.0043 (mg/L)	
	concentration of ground water into SW-005	C_g5 =	0.0043 (mg/L)	
	concentration of ground water into USGS Gage	C_g6 =	0.0043 (mg/L)	
	concentration of ground water into Colby Lake	C_gcl =	0.0043 (mg/L)	
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)	
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)	
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0002 (mg/L)	
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.0646 (mg/L)	
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0808 (mg/L)	
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0036 (mg/L)	
	concentration of liner leakage from LOSP	C_gC4LO =	0.0003 (mg/L)	
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0017 (mg/L)	
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0014 (mg/L)	
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0002 (mg/L)	
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.0646 (mg/L)	
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0808 (mg/L)	
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0036 (mg/L)	
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0003 (mg/L)	
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0017 (mg/L)	
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	0.0017 (mg/L)	
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0043 (mg/L)	
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0043 (mg/L)	
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0043 (mg/L)	
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0630 (mg/L)	

Partridge River Mass-Balance--Mine Site-Proposed Action

Case		Year 1	
Parameter		Zinc	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0160 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0160 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0160 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0160 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0160 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0160 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0160 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0160 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0620 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0073 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0275 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0275 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0275 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0275 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0275 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0275 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0275 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0275 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0001 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.0900 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0900 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	19.0296 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	1.6394 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0046 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0030 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0001 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.0900 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0900 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	19.0296 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	1.6394 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0046 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	0.0046 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0275 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0275 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0275 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	2.2100 (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M_s1 =	38.11218 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.14009 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.20744 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	39.84958 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.27967 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	25.77447 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.08395 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00006 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00018 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	26.58507 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.25128 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00018 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00949 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00997 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00987 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00001 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00244 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00001 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00002 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	- (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	294.25665 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	1.08299 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.00668 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	0.00458 (mg/s)
	mass flux of surface water into SW-005	M_s5 =	69.97857 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	1.76663 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.12429 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.36578 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	152.12722 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.91055 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.68429 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	38.4597 (mg/s)
	mass flux in river at SW-002	M_r2 =	78.5889 (mg/s)
	mass flux in river at SW-003	M_r3 =	104.4476 (mg/s)
	mass flux in river at SW-004	M_r4 =	131.3159 (mg/s)
	mass flux in river at SW-004A	M_r4A =	426.9668 (mg/s)
	mass flux in river at SW-005	M_r5 =	498.4120 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	498.9021 (mg/s)
	mass flux into Colby Lake	M_cl =	652.6242 (mg/s)
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C_r1 =	0.01592 (mg/L)
	concentration in river at SW-002	C_r2 =	0.01599 (mg/L)
	concentration in river at SW-003	C_r3 =	0.01599 (mg/L)
	concentration in river at SW-004	C_r4 =	0.01601 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.01602 (mg/L)
	concentration in river at SW-005	C_r5 =	0.01604 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.01604 (mg/L)
	concentration in Colby Lake	C_cl =	0.01638 (mg/L)

***Appendix H.2***  
***Partridge River***  
***Proposed Action***  
***Year 5***



## Partridge River Mass-Balance Model - Mine Site - Propsed Action

### FLOWS

Case	Year 5			
Flows	Low Flow Conditions (no surface runoff)			
Total flow in Partridge River	flow in river at SW-001	Q_r1_L =	1.18	(cfs)
	flow in river at SW-002	Q_r2_L =	1.52	(cfs)
	flow in river at SW-003	Q_r3_L =	1.62	(cfs)
	flow in river at SW-004	Q_r4_L =	2.03	(cfs)
	flow in river at SW-004A	Q_r4a_L =	3.51	(cfs)
	flow in river at SW-005	Q_r5_L =	5.78	(cfs)
	flow in river at USGS Gage	Q_r6_L =	6.25	(cfs)
	total flow into Colby Lake	Q_cl_L =	7.81	(cfs)
	flow check	Q_ck_L =	7.81	(cfs)
Input flow data	surface water flow into SW-001	Q_s1_L =	-	(cfs)
	surface water flow into SW-002	Q_s2_L =	-	(cfs)
	surface water flow into SW-003	Q_s3_L =	-	(cfs)
	surface water flow into SW-004	Q_s4_L =	-	(cfs)
	surface water flow into SW-004A	Q_s4a_L =	-	(cfs)
	surface water flow into SW-005	Q_s5_L =	-	(cfs)
	surface water flow into USGS Gage	Q_s6_L =	-	(cfs)
	surface water flow into Colby Lake	Q_scl_L =	-	(cfs)
	surface water inflow from Hoyt Lakes WWTP	Q_shl_L =	0.39	(cfs)
	surface water inflow from discharges upstream of PM-1	Q_sns_L =	1.00	(cfs)
	West Pit overflow	Q_sms_L =	-	(cfs)
	ground water flow into SW-001	Q_g1_L =	0.18	(cfs)
	ground water flow into SW-002	Q_g2_L =	0.34	(cfs)
	ground water flow into SW-003	Q_g3_L =	0.11	(cfs)
	ground water flow into SW-004	Q_g4_L =	0.32	(cfs)
	ground water flow into SW-004A	Q_g4a_L =	1.39	(cfs)
	ground water flow into SW-005	Q_g5_L =	2.27	(cfs)
	ground water flow into USGS Gage	Q_g6_L =	0.47	(cfs)
	ground water flow into Colby Lake	Q_gcl_L =	1.17	(cfs)
	ground water seepage from East Pit to SW-003	Q_gep_003_L =	-	(cfs)
	ground water seepage from East Pit to SW-004	Q_gep_004_L =	-	(cfs)
	ground water seepage from West Pit	Q_gwp_L =	-	(cfs)
	ground water liner leakage from Cat 1/2 stockpile	Q_gC12_L =	-	(cfs)
	ground water liner leakage from Cat 3 stockpile to SW-003	Q_gC3_003_L =	0.0000	(cfs)
	ground water liner leakage from Cat 3 stockpile to SW-004	Q_gC3_004_L =	-	(cfs)
	ground water liner leakage from Cat 3LO stockpile to SW-003	Q_gC3LO_003_L =	0.0000	(cfs)
	ground water liner leakage from Cat 3LO stockpile to SW-004	Q_gC3LO_004_L =	0.0000	(cfs)
	ground water liner leakage from Cat 4 stockpile	Q_gC4_L =	0.0000	(cfs)
	ground water liner leakage from Cat 4LO stockpile	Q_gC4LO_L =	0.0000	(cfs)
	ground water seepage from Overburden Storage	Q_gOS_L =	0.0765	(cfs)
	ground water seepage from Overburden (Cat 1/2)	Q_gO12_L =	0.0539	(cfs)
	ground water liner leakage from Cat 1/2 sumps	Q_gC12s_L =	0.0000	(cfs)
	ground water liner leakage from Cat 3 sumps	Q_gC3s_L =	0.0000	(cfs)
	ground water liner leakage from Cat 3LO sumps	Q_gC3LOs_L =	0.0000	(cfs)
	ground water liner leakage from Cat 4 sumps	Q_gC4s_L =	0.0000	(cfs)
	ground water liner leakage from LO SP sumps	Q_gC4LOs_L =	0.0000	(cfs)
	ground water seepage from Overburden pond - PW1	Q_gOp1_L =	0.0189	(cfs)
	ground water seepage from Overburden pond - PW7	Q_gOp7_L =	0.0355	(cfs)
	ground water leakage from Haul Road pond - PW2	Q_gHRp2_L =	0.0000	(cfs)
	ground water leakage from Haul Road pond - PW4	Q_gHRp4_L =	0.0000	(cfs)
	ground water leakage from RTH pond - PW3	Q_gRTHp_L =	0.0000	(cfs)
	ground water liner leakage from WWTF pond	Q_gWTFp_L =	0.000001	(cfs)

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case	Year 5		
Parameter	Silver		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0001 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0001 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0001 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0001 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0001 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0001 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0001 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0001 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0001 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0001 (mg/L)
	concentration of West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0006 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0006 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0006 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0006 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0006 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0006 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0006 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0006 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	0.0007 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	0.0007 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0007 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0007 (mg/L)
	concentration of liner leakage from Cat 4LO stockpile	C gC4LO =	0.0007 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	- (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	0.0007 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C gC3s =	0.0007 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.0007 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0007 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0007 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	- (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	- (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0006 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0006 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0006 (mg/L)
	concentration of liner leakage from WWTP pond	C gWTFp =	0.0043 (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M s1 =	- (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.00280 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.00340 (mg/s)
	mass flux of surface water into SW-002	M s2 =	- (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.00525 (mg/s)
	mass flux of surface water into SW-003	M s3 =	- (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.00166 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep 003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M gC3 003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO 003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M gC3s 003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	- (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.00491 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep 004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M gC3 004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO 004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4LO stockpile	M gC4LO =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	- (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs 004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00000 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.02160 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	- (mg/s)
	mass flux of surface water into SW-005	M s5 =	- (mg/s)
	mass flux of ground water into SW-005	M g5 =	0.03533 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.00732 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	0.01821 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.00110 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M r1 =	0.0062 (mg/s)
	mass flux in river at SW-002	M r2 =	0.0114 (mg/s)
	mass flux in river at SW-003	M r3 =	0.0131 (mg/s)
	mass flux in river at SW-004	M r4 =	0.0180 (mg/s)
	mass flux in river at SW-004A	M r4A =	0.0396 (mg/s)
	mass flux in river at SW-005	M r5 =	0.0749 (mg/s)
	mass flux in river at USGS Gage	M r6 =	0.0823 (mg/s)
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C r1 =	0.00019 (mg/L)
	concentration in river at SW-002	C r2 =	0.00027 (mg/L)
	concentration in river at SW-003	C r3 =	0.00029 (mg/L)
	concentration in river at SW-004	C r4 =	0.00031 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00040 (mg/L)
	concentration in river at SW-005	C r5 =	0.00046 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00046 (mg/L)
	concentration in Colby Lake	C cl =	0.00015 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Propsed Action

Case	Year 5		
Parameter	Aluminum		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0700 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0700 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0700 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0700 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0700 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0700 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0700 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0700 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0700 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0173 (mg/L)
	concentration of West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.1250 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.1250 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.1250 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.1250 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.1250 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.1250 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.1250 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.1250 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	1.6800 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	1.6800 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	1.6800 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	83.0000 (mg/L)
	concentration of liner leakage from Cat 4LO stockpile	C gC4LO =	67.6066 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.4106 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	0.1400 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	1.6800 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C gC3s =	1.6800 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	1.6800 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	83.0000 (mg/L)
	concentration of liner leakage from LOSEP sumps	C gC4LOs =	67.6066 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.4106 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	0.4106 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.1250 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.1250 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.1250 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	16.3000 (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M s1 =	(mg/s)
	mass flux of ground water into SW-001	M g1 =	0.63675 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.48959 (mg/s)
	mass flux of surface water into SW-002	M s2 =	(mg/s)
	mass flux of ground water into SW-002	M g2 =	1.19246 (mg/s)
	mass flux of surface water into SW-003	M s3 =	(mg/s)
	mass flux of ground water into SW-003	M g3 =	0.37642 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep 003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M gC3 003 =	0.00053 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO 00 =	0.00012 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M gC3s 003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	(mg/s)
	mass flux of ground water into SW-004	M g4 =	1.11611 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep 004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M gC3 004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO 00 =	0.00012 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00718 (mg/s)
	mass flux of liner leakage from Cat 4LO stockpile	M gC4LO =	0.00889 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.88859 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs 0 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00004 (mg/s)
	mass flux of liner leakage from LOSEP sumps	M gC4LOs =	0.00006 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.21972 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00005 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00010 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00041 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M g4A =	4.90844 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M gC12s =	0.00004 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M gO12 =	0.21373 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	0.41280 (mg/s)
	mass flux of surface water into SW-005	M s5 =	- (mg/s)
	mass flux of ground water into SW-005	M g5 =	8.03013 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	- (mg/s)
mass flux of ground water into USGS Gage	M g6 =	1.66263 (mg/s)	
mass flux of surface water into Colby Lake	M scl =	- (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	4.13888 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.77259 (mg/s)	
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M r1 =	1.1263 (mg/s)
	mass flux in river at SW-002	M r2 =	2.3188 (mg/s)
	mass flux in river at SW-003	M r3 =	2.6959 (mg/s)
	mass flux in river at SW-004	M r4 =	4.9372 (mg/s)
	mass flux in river at SW-004A	M r4A =	10.4722 (mg/s)
	mass flux in river at SW-005	M r5 =	18.5023 (mg/s)
	mass flux in river at USGS Gage	M r6 =	20.1649 (mg/s)
mass flux into Colby Lake	M cl =	25.0764 (mg/s)	
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C r1 =	0.03373 (mg/L)
	concentration in river at SW-002	C r2 =	0.05401 (mg/L)
	concentration in river at SW-003	C r3 =	0.05868 (mg/L)
	concentration in river at SW-004	C r4 =	0.08575 (mg/L)
	concentration in river at SW-004A	C r4A =	0.10538 (mg/L)
	concentration in river at SW-005	C r5 =	0.11308 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.11398 (mg/L)
concentration in Colby Lake	C cl =	0.07639 (mg/L)	

**Partridge River Mass-Balance Model - Mine Site - Proposed Action**

Case		Year 5	
Parameter		Arsenic	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0021 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0021 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0021 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0021 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0021 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0021 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0021 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0021 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0021 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0065 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0022 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0022 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0022 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0022 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0022 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0022 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0022 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0022 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.7100 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.7100 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.7100 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.2239 (mg/L)
	concentration of liner leakage from Cat 4LO stockpile	C_gC4LO =	0.0738 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0016 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0027 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.7100 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.7100 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.7100 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.2239 (mg/L)
	concentration of liner leakage from LOSEP sumps	C_gC4LOs =	0.0738 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0016 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	0.0016 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0022 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0022 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0022 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.3900 (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.01100 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.18395 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.02061 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00650 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00022 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00005 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.01929 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00005 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00002 (mg/s)
	mass flux of liner leakage from Cat 4LO stockpile	M_gC4LO =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00338 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSEP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00083 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00001 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.08482 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00002 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.00412 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	0.00157 (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.13876 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.02873 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.07152 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.02329 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	0.1950 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.2156 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.2223 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.2459 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.3365 (mg/s)
	mass flux in river at SW-005	M_r5 =	0.4752 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	0.5039 (mg/s)
	mass flux into Colby Lake	M_cl =	0.5988 (mg/s)
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C_r1 =	0.00584 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00502 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00484 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00427 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00339 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00290 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00285 (mg/L)
	concentration in Colby Lake	C_cl =	0.00220 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Propsed Action

Case	Year 5		
Parameter	Boron		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0450 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0450 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0450 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0450 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0450 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0450 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0450 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0450 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0450 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0960 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0870 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0870 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0870 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0870 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0870 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0870 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0870 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0870 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.7361 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.7600 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.7600 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.7600 (mg/L)
	concentration of liner leakage from Cat 4LO stockpile	C_gC4LO =	0.7600 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0622 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0370 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.7361 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.7600 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.7600 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.7600 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.7600 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0622 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	0.0622 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0870 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0870 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0870 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	0.9200 (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M_s1 =	(mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.44318 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	2.71680 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	(mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.82995 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	(mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.26199 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00024 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00006 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	(mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.77681 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00006 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00007 (mg/s)
	mass flux of liner leakage from Cat 4LO stockpile	M_gC4LO =	0.00010 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.13461 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)	
mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.03328 (mg/s)	
mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00003 (mg/s)	
mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00007 (mg/s)	
mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)	
mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00002 (mg/s)	
mass flux of surface water into SW-004A	M_s4A =	- (mg/s)	
mass flux of ground water into SW-004A	M_g4A =	3.41627 (mg/s)	
mass flux of West Pit overflow	M_sms =	#N/A (mg/s)	
mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	- (mg/s)	
mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00002 (mg/s)	
mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.05649 (mg/s)	
mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	0.06253 (mg/s)	
mass flux of surface water into SW-005	M_s5 =	- (mg/s)	
mass flux of ground water into SW-005	M_g5 =	5.58897 (mg/s)	
mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)	
mass flux of ground water into USGS Gage	M_g6 =	1.15719 (mg/s)	
mass flux of surface water into Colby Lake	M_scl =	- (mg/s)	
mass flux of ground water into Colby Lake	M_gcl =	2.88066 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.49667 (mg/s)	
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	3.1600 (mg/s)
	mass flux in river at SW-002	M_r2 =	3.9899 (mg/s)
	mass flux in river at SW-003	M_r3 =	4.2522 (mg/s)
	mass flux in river at SW-004	M_r4 =	5.1973 (mg/s)
	mass flux in river at SW-004A	M_r4A =	8.7326 (mg/s)
	mass flux in river at SW-005	M_r5 =	14.3215 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	15.4787 (mg/s)
mass flux into Colby Lake	M_cl =	18.8560 (mg/s)	
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C_r1 =	0.09463 (mg/L)
	concentration in river at SW-002	C_r2 =	0.09293 (mg/L)
	concentration in river at SW-003	C_r3 =	0.09255 (mg/L)
	concentration in river at SW-004	C_r4 =	0.09027 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.08788 (mg/L)
	concentration in river at SW-005	C_r5 =	0.08753 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.08749 (mg/L)
	concentration in Colby Lake	C_cl =	0.05092 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Propsed Action

Case	Year 5				
Parameter	Barium				
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0077	(mg/L)	
	concentration of surface water into SW-002	C s2 =	0.0077	(mg/L)	
	concentration of surface water into SW-003	C s3 =	0.0077	(mg/L)	
	concentration of surface water into SW-004	C s4 =	0.0077	(mg/L)	
	concentration of surface water into SW-004A	C s4A =	0.0077	(mg/L)	
	concentration of surface water into SW-005	C s5 =	0.0077	(mg/L)	
	concentration of surface water into USGS Gage	C s6 =	0.0077	(mg/L)	
	concentration of surface water into Colby Lake	C scl =	0.0077	(mg/L)	
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0077	(mg/L)	
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0050	(mg/L)	
	concentration of West Pit overflow	C sms =	#N/A	(mg/L)	
	concentration of ground water into SW-001	C g1 =	0.0219	(mg/L)	
	concentration of ground water into SW-002	C g2 =	0.0219	(mg/L)	
	concentration of ground water into SW-003	C g3 =	0.0219	(mg/L)	
	concentration of ground water into SW-004	C g4 =	0.0219	(mg/L)	
	concentration of ground water into SW-004A	C g4A =	0.0219	(mg/L)	
	concentration of ground water into SW-005	C g5 =	0.0219	(mg/L)	
	concentration of ground water into USGS Gage	C g6 =	0.0219	(mg/L)	
	concentration of ground water into Colby Lake	C gcl =	0.0219	(mg/L)	
	concentration of ground water seepage from East Pit	C gep =	#N/A	(mg/L)	
	concentration of ground water seepage from West Pit	C gwp =	#N/A	(mg/L)	
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	0.1900	(mg/L)	
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	0.1900	(mg/L)	
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.1900	(mg/L)	
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.1900	(mg/L)	
	concentration of liner leakage from Cat 4LO stockpile	C gC4LO =	0.1900	(mg/L)	
	concentration of seepage from Overburden (Storage)	C gOS =	0.0168	(mg/L)	
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	0.0140	(mg/L)	
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	0.1900	(mg/L)	
	concentration of liner leakage from Cat 3 sumps	C gC3s =	0.1900	(mg/L)	
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.1900	(mg/L)	
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.1900	(mg/L)	
	concentration of liner leakage from LOSEP sumps	C gC4LOs =	0.1900	(mg/L)	
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0168	(mg/L)	
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	0.0168	(mg/L)	
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0219	(mg/L)	
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0219	(mg/L)	
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0219	(mg/L)	
	concentration of liner leakage from WWTF pond	C gWTFp =	0.2300	(mg/L)	
				Low Flow	
	Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	-	(mg/s)
mass flux of ground water into SW-001		M g1 =	0.11166	(mg/s)	
mass flux of surface discharges from upstream of PM-1		M sns =	0.14150	(mg/s)	
mass flux of surface water into SW-002		M s2 =	-	(mg/s)	
mass flux of ground water into SW-002		M g2 =	0.20911	(mg/s)	
mass flux of surface water into SW-003		M s3 =	-	(mg/s)	
mass flux of ground water into SW-003		M g3 =	0.06601	(mg/s)	
mass flux of seepage from East Pit to SW-003		M gep_003 =	#N/A	(mg/s)	
mass flux of liner leakage from Cat 3 stockpile to SW-003		M gC3_003 =	0.00006	(mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-003		M gC3LO_003 =	0.00001	(mg/s)	
mass flux of liner leakage from Cat 3 sumps to SW-003		M gC3s_003 =	0.00000	(mg/s)	
mass flux of surface water into SW-004		M s4 =	-	(mg/s)	
mass flux of ground water into SW-004		M g4 =	0.19572	(mg/s)	
mass flux of seepage from East Pit to SW-004		M gep_004 =	#N/A	(mg/s)	
mass flux of seepage from West Pit		M gwp =	#N/A	(mg/s)	
mass flux of liner leakage from Cat 3 stockpile to SW-004		M gC3_004 =	-	(mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-004		M gC3LO_004 =	0.00001	(mg/s)	
mass flux of liner leakage from Cat 4 stockpile		M gC4 =	0.00002	(mg/s)	
mass flux of liner leakage from Cat 4LO stockpile		M gC4LO =	0.00002	(mg/s)	
mass flux of seepage from Overburden (Storage)		M gOS =	0.03643	(mg/s)	
mass flux of liner leakage from Cat 3LO sumps to SW-004		M gC3LOs_004 =	0.00000	(mg/s)	
mass flux of liner leakage from Cat 4 sumps		M gC4s =	0.00000	(mg/s)	
mass flux of liner leakage from LOSEP sumps		M gC4LOs =	0.00000	(mg/s)	
mass flux of seepage from Overburden Ponds - PW1		M gOp1 =	0.00901	(mg/s)	
mass flux of leakage from Haul Road Pond - PW2		M gHRp2 =	0.00001	(mg/s)	
mass flux of leakage from Haul Road Pond - PW4		M gHRp4 =	0.00002	(mg/s)	
mass flux of leakage from RTH Pond - PW3		M gRTHp =	0.00000	(mg/s)	
mass flux of liner leakage from WWTF pond		M gWTFp =	0.00001	(mg/s)	
mass flux of surface water into SW-004A		M s4A =	-	(mg/s)	
mass flux of ground water into SW-004A		M g4A =	0.86074	(mg/s)	
mass flux of West Pit overflow		M sms =	#N/A	(mg/s)	
mass flux of liner leakage from Cat 1/2 stockpile		M gC12 =	-	(mg/s)	
mass flux of liner leakage from Cat 1/2 sumps		M gC12s =	0.00000	(mg/s)	
mass flux of seepage from Overburden (Cat 1/2)		M gO12 =	0.02137	(mg/s)	
mass flux of seepage from Overburden Pond - PW7		M gOp7 =	0.01692	(mg/s)	
mass flux of surface water into SW-005		M s5 =	-	(mg/s)	
mass flux of ground water into SW-005		M g5 =	1.40816	(mg/s)	
mass flux of surface water into USGS Gage		M s6 =	-	(mg/s)	
mass flux of ground water into USGS Gage		M g6 =	0.29156	(mg/s)	
mass flux of surface water into Colby Lake		M scl =	-	(mg/s)	
mass flux of ground water into Colby Lake		M gcl =	0.72579	(mg/s)	
mass flux of surface water from Hoyt Lakes WWTP		M shl =	0.08476	(mg/s)	
			Low Flow		
Mass balance at each node	mass flux in river at SW-001	M r1 =	0.2532	(mg/s)	
	mass flux in river at SW-002	M r2 =	0.4623	(mg/s)	
	mass flux in river at SW-003	M r3 =	0.5284	(mg/s)	
	mass flux in river at SW-004	M r4 =	0.7696	(mg/s)	
	mass flux in river at SW-004A	M r4A =	1.6686	(mg/s)	
	mass flux in river at SW-005	M r5 =	3.0768	(mg/s)	
	mass flux in river at USGS Gage	M r6 =	3.3684	(mg/s)	
	mass flux into Colby Lake	M cl =	4.1789	(mg/s)	
			Low Flow		
Convert mass flux to concentration	concentration in river at SW-001	C r1 =	0.00758	(mg/L)	
	concentration in river at SW-002	C r2 =	0.01077	(mg/L)	
	concentration in river at SW-003	C r3 =	0.01150	(mg/L)	
	concentration in river at SW-004	C r4 =	0.01337	(mg/L)	
	concentration in river at SW-004A	C r4A =	0.01679	(mg/L)	
	concentration in river at SW-005	C r5 =	0.01881	(mg/L)	
	concentration in river at USGS Gage	C r6 =	0.01904	(mg/L)	
	concentration in Colby Lake	C cl =	0.00933	(mg/L)	



**Partridge River Mass-Balance Model - Mine Site - Proposed Action**

Case		Year 5	
Parameter		Beryllium	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0001 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0001 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0001 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0001 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0001 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0001 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0001 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0001 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0001 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0001 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0001 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0001 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0001 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0001 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0001 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0001 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0001 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0001 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0002 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0023 (mg/L)
	concentration of liner leakage from Cat 4LO stockpile	C_gC4LO =	0.0023 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	- (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0002 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0023 (mg/L)
	concentration of liner leakage from LOSEP sumps	C_gC4LOs =	0.0023 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	- (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	- (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0001 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0001 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0001 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0020 (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00074 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.00283 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.00138 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00044 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.00129 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4LO stockpile	M_gC4LO =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	- (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSEP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00000 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.00569 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	- (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.00931 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.00193 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.00480 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00110 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	0.0038 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.0050 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.0054 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.0067 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.0124 (mg/s)
	mass flux in river at SW-005	M_r5 =	0.0217 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	0.0236 (mg/s)
	mass flux into Colby Lake	M_cl =	0.0295 (mg/s)
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C_r1 =	0.00011 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00012 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00012 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00012 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00012 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00013 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00013 (mg/L)
	concentration in Colby Lake	C_cl =	0.00010 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Propsed Action

Case	Year 5		
Parameter	Calcium		
Input concentration data	concentration of surface water into SW-001	C s1 =	17.0000 (mg/L)
	concentration of surface water into SW-002	C s2 =	17.0000 (mg/L)
	concentration of surface water into SW-003	C s3 =	17.0000 (mg/L)
	concentration of surface water into SW-004	C s4 =	17.0000 (mg/L)
	concentration of surface water into SW-004A	C s4A =	17.0000 (mg/L)
	concentration of surface water into SW-005	C s5 =	17.0000 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	17.0000 (mg/L)
	concentration of surface water into Colby Lake	C scl =	17.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	17.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	24.5000 (mg/L)
	concentration of West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	14.7900 (mg/L)
	concentration of ground water into SW-002	C g2 =	14.7900 (mg/L)
	concentration of ground water into SW-003	C g3 =	14.7900 (mg/L)
	concentration of ground water into SW-004	C g4 =	14.7900 (mg/L)
	concentration of ground water into SW-004A	C g4A =	14.7900 (mg/L)
	concentration of ground water into SW-005	C g5 =	14.7900 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	14.7900 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	14.7900 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	228.2929 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	540.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	540.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	455.7480 (mg/L)
	concentration of liner leakage from Cat 4LO stockpile	C gC4LO =	150.1668 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	9.3700 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	15.8000 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	228.2929 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C gC3s =	540.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	540.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	455.7480 (mg/L)
	concentration of liner leakage from LOSEP sumps	C gC4LOs =	150.1668 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	9.3700 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	9.3700 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	14.7900 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	14.7900 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	14.7900 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	396.0000 (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M s1 =	(mg/s)
	mass flux of ground water into SW-001	M g1 =	75.34026 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	693.35000 (mg/s)
	mass flux of surface water into SW-002	M s2 =	(mg/s)
	mass flux of ground water into SW-002	M g2 =	141.09146 (mg/s)
	mass flux of surface water into SW-003	M s3 =	(mg/s)
	mass flux of ground water into SW-003	M g3 =	44.53811 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep 003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M gC3 003 =	0.16972 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO 00 =	0.03922 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M gC3s 003 =	0.00028 (mg/s)
	mass flux of surface water into SW-004	M s4 =	(mg/s)
	mass flux of ground water into SW-004	M g4 =	132.05814 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep 004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M gC3 004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO 00 =	0.03922 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.03944 (mg/s)
	mass flux of liner leakage from Cat 4LO stockpile	M gC4LO =	0.01976 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	20.27794 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs 0 =	0.00053 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00021 (mg/s)
	mass flux of liner leakage from LOSEP sumps	M gC4LOs =	0.00014 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	5.01400 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00563 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.01206 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.01000 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M g4A =	580.76605 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M gC12s =	0.00500 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M gO12 =	24.12084 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	9.42024 (mg/s)
	mass flux of surface water into SW-005	M s5 =	- (mg/s)
	mass flux of ground water into SW-005	M g5 =	950.12439 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	196.72179 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	489.71169 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl =	187.62900 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M r1 =	768.6903 (mg/s)
	mass flux in river at SW-002	M r2 =	909.7817 (mg/s)
	mass flux in river at SW-003	M r3 =	954.5291 (mg/s)
	mass flux in river at SW-004	M r4 =	1,112.0064 (mg/s)
	mass flux in river at SW-004A	M r4A =	1,726.3185 (mg/s)
	mass flux in river at SW-005	M r5 =	2,676.4429 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M r6 =	2,873.1647 (mg/s)
	mass flux into Colby Lake	M cl =	3,550.5054 (mg/s)
	Low Flow		
	concentration in river at SW-001	C r1 =	23.01881 (mg/L)
	concentration in river at SW-002	C r2 =	21.19041 (mg/L)
	concentration in river at SW-003	C r3 =	20.77529 (mg/L)
	concentration in river at SW-004	C r4 =	19.31403 (mg/L)
	concentration in river at SW-004A	C r4A =	17.37184 (mg/L)
	concentration in river at SW-005	C r5 =	16.35812 (mg/L)
	concentration in river at USGS Gage	C r6 =	16.24023 (mg/L)
	concentration in Colby Lake	C cl =	16.86197 (mg/L)

**Partridge River Mass-Balance Model - Mine Site - Proposed Action**

Case		Year 5	
Parameter		Cadmium	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0001 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0001 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0001 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0001 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0001 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0001 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0001 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0001 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0001 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0001 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0001 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0001 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0001 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0001 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0001 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0001 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0001 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0001 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0002 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0149 (mg/L)
	concentration of liner leakage from Cat 4LO stockpile	C_gC4LO =	0.0149 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0001 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0002 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0149 (mg/L)
	concentration of liner leakage from LOSEP sumps	C_gC4LOs =	0.0149 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0001 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	0.0001 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0001 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0001 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0001 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0063 (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00051 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.00283 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.00095 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00030 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.00089 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4LO stockpile	M_gC4LO =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00013 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSEP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00003 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00000 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.00393 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	0.00006 (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.00642 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.00133 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.00331 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00110 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	0.0033 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.0043 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.0046 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.0057 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.0096 (mg/s)
	mass flux in river at SW-005	M_r5 =	0.0161 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	0.0174 (mg/s)
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C_r1 =	0.00010 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00010 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00010 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00010 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00010 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00010 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00010 (mg/L)
	concentration in Colby Lake	C_cl =	0.00010 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case	Year 5		
Parameter	Chloride		
Input concentration data	concentration of surface water into SW-001	C_s1 =	8.0000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	8.0000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	8.0000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	8.0000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	8.0000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	8.0000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	8.0000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	8.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	8.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	1.6000 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	6.6000 (mg/L)
	concentration of ground water into SW-002	C_g2 =	6.6000 (mg/L)
	concentration of ground water into SW-003	C_g3 =	6.6000 (mg/L)
	concentration of ground water into SW-004	C_g4 =	6.6000 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	6.6000 (mg/L)
	concentration of ground water into SW-005	C_g5 =	6.6000 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	6.6000 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	6.6000 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	26.7957 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	15.3060 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	11.6744 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	16.3051 (mg/L)
	concentration of liner leakage from Cat 4LO stockpile	C_gC4LO =	0.8183 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	5.3500 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	2.3300 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	26.7957 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	15.3060 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_g3LOs =	11.6744 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	16.3051 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.8183 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	5.3500 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	5.3500 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	6.6000 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	6.6000 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	6.6000 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	27.7000 (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	33.62040 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	45.28000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	62.96171 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	19.87502 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00481 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00085 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00001 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	58.93061 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00085 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00141 (mg/s)
	mass flux of liner leakage from Cat 4LO stockpile	M_gC4LO =	0.00011 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	11.57812 (mg/s)
mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00001 (mg/s)	
mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00001 (mg/s)	
mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)	
mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	2.86285 (mg/s)	
mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00251 (mg/s)	
mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00538 (mg/s)	
mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)	
mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00070 (mg/s)	
mass flux of surface water into SW-004A	M_s4A =	- (mg/s)	
mass flux of ground water into SW-004A	M_g4A =	259.16538 (mg/s)	
mass flux of West Pit overflow	M_sms =	#N/A (mg/s)	
mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	- (mg/s)	
mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00059 (mg/s)	
mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	3.55706 (mg/s)	
mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	5.37868 (mg/s)	
mass flux of surface water into SW-005	M_s5 =	- (mg/s)	
mass flux of ground water into SW-005	M_g5 =	423.99060 (mg/s)	
mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)	
mass flux of ground water into USGS Gage	M_g6 =	87.78660 (mg/s)	
mass flux of surface water into Colby Lake	M_scl =	- (mg/s)	
mass flux of ground water into Colby Lake	M_gcl =	218.53260 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M_shl =	88.29600 (mg/s)	
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	78.9004 (mg/s)
	mass flux in river at SW-002	M_r2 =	141.8621 (mg/s)
	mass flux in river at SW-003	M_r3 =	161.7428 (mg/s)
	mass flux in river at SW-004	M_r4 =	235.1254 (mg/s)
	mass flux in river at SW-004A	M_r4A =	503.2271 (mg/s)
	mass flux in river at SW-005	M_r5 =	927.2177 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	1,015.0043 (mg/s)
	mass flux into Colby Lake	M_cl =	1,321.8329 (mg/s)
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C_r1 =	2.36271 (mg/L)
	concentration in river at SW-002	C_r2 =	3.30422 (mg/L)
	concentration in river at SW-003	C_r3 =	3.52033 (mg/L)
	concentration in river at SW-004	C_r4 =	4.08381 (mg/L)
	concentration in river at SW-004A	C_r4A =	5.06394 (mg/L)
	concentration in river at SW-005	C_r5 =	5.66705 (mg/L)
	concentration in river at USGS Gage	C_r6 =	5.73719 (mg/L)
	concentration in Colby Lake	C_cl =	7.70275 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Propsed Action

Case	Year 5		
Parameter	Cobalt		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0005 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0005 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0005 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0005 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0005 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0005 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0005 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0005 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0005 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0005 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0017 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0017 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0017 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0017 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0017 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0017 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0017 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0017 (mg/L)
	concentration of ground water seepage from East Pit	C_ggp =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0142 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.0520 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0520 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	16.0428 (mg/L)
	concentration of liner leakage from Cat 4LO stockpile	C_gC4LO =	5.2860 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0011 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0013 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0142 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.0520 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_g3LOs =	0.0520 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	16.0428 (mg/L)
	concentration of liner leakage from LOSEP sumps	C_gC4LOs =	5.2860 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0011 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	0.0011 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0017 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0017 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0017 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	1.8200 (mg/L)
	Convert concentration to mass flux	Low Flow	
mass flux of surface water into SW-001		M_s1 =	(mg/s)
mass flux of ground water into SW-001		M_g1 =	0.00841 (mg/s)
mass flux of surface discharges from upstream of PM-1		M_sns =	0.01415 (mg/s)
mass flux of surface water into SW-002		M_s2 =	(mg/s)
mass flux of ground water into SW-002		M_g2 =	0.01574 (mg/s)
mass flux of surface water into SW-003		M_s3 =	(mg/s)
mass flux of ground water into SW-003		M_g3 =	0.00497 (mg/s)
mass flux of seepage from East Pit to SW-003		M_ggp_003 =	#N/A (mg/s)
mass flux of liner leakage from Cat 3 stockpile to SW-003		M_gC3_003 =	0.00002 (mg/s)
mass flux of liner leakage from Cat 3LO stockpile to SW-003		M_gC3LO_00 =	0.00000 (mg/s)
mass flux of liner leakage from Cat 3 sumps to SW-003		M_gC3s_003 =	0.00000 (mg/s)
mass flux of surface water into SW-004		M_s4 =	(mg/s)
mass flux of ground water into SW-004		M_g4 =	0.01473 (mg/s)
mass flux of seepage from East Pit to SW-004		M_ggp_004 =	#N/A (mg/s)
mass flux of seepage from West Pit		M_gwp =	#N/A (mg/s)
mass flux of liner leakage from Cat 3 stockpile to SW-004		M_gC3_004 =	- (mg/s)
mass flux of liner leakage from Cat 3LO stockpile to SW-004		M_gC3LO_00 =	0.00000 (mg/s)
mass flux of liner leakage from Cat 4 stockpile		M_gC4 =	0.00139 (mg/s)
mass flux of liner leakage from Cat 4LO stockpile		M_gC4LO =	0.00070 (mg/s)
mass flux of seepage from Overburden (Storage)		M_gOS =	0.00240 (mg/s)
mass flux of liner leakage from Cat 3LO sumps to SW-004		M_gC3LOs_0 =	0.00000 (mg/s)
mass flux of liner leakage from Cat 4 sumps		M_gC4s =	0.00001 (mg/s)
mass flux of liner leakage from LOSEP sumps		M_gC4LOs =	0.00000 (mg/s)
mass flux of seepage from Overburden Ponds - PW1		M_gOp1 =	0.00059 (mg/s)
mass flux of leakage from Haul Road Pond - PW2		M_gHRp2 =	0.00000 (mg/s)
mass flux of leakage from Haul Road Pond - PW4		M_gHRp4 =	0.00000 (mg/s)
mass flux of leakage from RTH Pond - PW3		M_gRTHp =	0.00000 (mg/s)
mass flux of liner leakage from WWTF pond		M_gWTFp =	0.00005 (mg/s)
mass flux of surface water into SW-004A		M_s4A =	- (mg/s)
mass flux of ground water into SW-004A		M_g4A =	0.06479 (mg/s)
mass flux of West Pit overflow		M_sms =	#N/A (mg/s)
mass flux of liner leakage from Cat 1/2 stockpile		M_gC12 =	- (mg/s)
mass flux of liner leakage from Cat 1/2 sumps		M_gC12s =	0.00000 (mg/s)
mass flux of seepage from Overburden (Cat 1/2)		M_gO12 =	0.00198 (mg/s)
mass flux of seepage from Overburden Pond - PW7		M_gOp7 =	0.00112 (mg/s)
mass flux of surface water into SW-005		M_s5 =	- (mg/s)
mass flux of ground water into SW-005		M_g5 =	0.10600 (mg/s)
mass flux of surface water into USGS Gage		M_s6 =	- (mg/s)
mass flux of ground water into USGS Gage		M_g6 =	0.02195 (mg/s)
mass flux of surface water into Colby Lake	M_scl =	- (mg/s)	
mass flux of ground water into Colby Lake	M_gcl =	0.05463 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00552 (mg/s)	
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	0.0226 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.0363 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.0433 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.0632 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.1311 (mg/s)
	mass flux in river at SW-005	M_r5 =	0.2371 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	0.2590 (mg/s)
	mass flux into Colby Lake	M_cl =	0.3191 (mg/s)
	Convert mass flux to concentration	Low Flow	
concentration in river at SW-001		C_r1 =	0.00068 (mg/L)
concentration in river at SW-002		C_r2 =	0.00089 (mg/L)
concentration in river at SW-003		C_r3 =	0.00094 (mg/L)
concentration in river at SW-004		C_r4 =	0.00110 (mg/L)
concentration in river at SW-004A		C_r4A =	0.00132 (mg/L)
concentration in river at SW-005		C_r5 =	0.00145 (mg/L)
concentration in river at USGS Gage		C_r6 =	0.00146 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Propsed Action

Case Parameter	Year 5 Copper		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0017 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0017 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0017 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0017 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0017 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0017 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0017 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0017 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0190 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0012 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0030 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0030 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0030 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0030 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0030 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0030 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0030 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0030 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0920 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.0920 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0920 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	2.8956 (mg/L)
	concentration of liner leakage from Cat 4LO stockpile	C_gC4LO =	0.9541 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0214 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0170 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0920 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.0920 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0920 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	2.8956 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.9541 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0214 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	0.0214 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0030 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0030 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0030 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.3400 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.01503 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.03509 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.02814 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00888 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00003 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.02634 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00025 (mg/s)
	mass flux of liner leakage from Cat 4LO stockpile	M_gC4LO =	0.00013 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.04640 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.01147 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00001 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.11584 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.02595 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	0.02155 (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.18951 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.03924 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.09768 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.20970 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	0.0501 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.0783 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.0872 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.1718 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.3351 (mg/s)
	mass flux in river at SW-005	M_r5 =	0.5246 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	0.5639 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	0.8713 (mg/s)
	Low Flow		
	concentration in river at SW-001	C_r1 =	0.00150 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00182 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00190 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00298 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00337 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00321 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00319 (mg/L)
	concentration in Colby Lake	C_cl =	0.00203 (mg/L)



**Partridge River Mass-Balance Model - Mine Site - Propsed Action**

Case	Year 5			
Parameter	Fluoride			
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0700 (mg/L)	
	concentration of surface water into SW-002	C s2 =	0.0700 (mg/L)	
	concentration of surface water into SW-003	C s3 =	0.0700 (mg/L)	
	concentration of surface water into SW-004	C s4 =	0.0700 (mg/L)	
	concentration of surface water into SW-004A	C s4A =	0.0700 (mg/L)	
	concentration of surface water into SW-005	C s5 =	0.0700 (mg/L)	
	concentration of surface water into USGS Gage	C s6 =	0.0700 (mg/L)	
	concentration of surface water into Colby Lake	C scl =	0.0700 (mg/L)	
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0700 (mg/L)	
	concentration of surface water discharges from upstream of PM-1	C sns =	0.1400 (mg/L)	
	concentration of West Pit overflow	C sms =	#N/A (mg/L)	
	concentration of ground water into SW-001	C g1 =	0.2800 (mg/L)	
	concentration of ground water into SW-002	C g2 =	0.2800 (mg/L)	
	concentration of ground water into SW-003	C g3 =	0.2800 (mg/L)	
	concentration of ground water into SW-004	C g4 =	0.2800 (mg/L)	
	concentration of ground water into SW-004A	C g4A =	0.2800 (mg/L)	
	concentration of ground water into SW-005	C g5 =	0.2800 (mg/L)	
	concentration of ground water into USGS Gage	C g6 =	0.2800 (mg/L)	
	concentration of ground water into Colby Lake	C gcl =	0.2800 (mg/L)	
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)	
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)	
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	0.0626 (mg/L)	
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	0.0621 (mg/L)	
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0621 (mg/L)	
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0622 (mg/L)	
	concentration of liner leakage from Cat 4LO stockpile	C gC4LO =	0.0628 (mg/L)	
	concentration of seepage from Overburden (Storage)	C gOS =	0.2239 (mg/L)	
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	0.4200 (mg/L)	
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	0.0626 (mg/L)	
	concentration of liner leakage from Cat 3 sumps	C gC3s =	0.0621 (mg/L)	
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.0621 (mg/L)	
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0622 (mg/L)	
	concentration of liner leakage from LOSEP sumps	C gC4LOs =	0.0628 (mg/L)	
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.2239 (mg/L)	
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	0.2239 (mg/L)	
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.2800 (mg/L)	
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.2800 (mg/L)	
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.2800 (mg/L)	
	concentration of liner leakage from WWTF ponc	C_gWTFp =	8.5600 (mg/L)	
				Low Flow
	Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	(mg/s)
		mass flux of ground water into SW-001	M g1 =	1.42632 (mg/s)
mass flux of surface discharges from upstream of PM-1		M sns =	3.96200 (mg/s)	
mass flux of surface water into SW-002		M s2 =	(mg/s)	
mass flux of ground water into SW-002		M g2 =	2.67110 (mg/s)	
mass flux of surface water into SW-003		M s3 =	(mg/s)	
mass flux of ground water into SW-003		M g3 =	0.84318 (mg/s)	
mass flux of seepage from East Pit to SW-003		M gep 003 =	#N/A (mg/s)	
mass flux of liner leakage from Cat 3 stockpile to SW-003		M gC3 003 =	0.00002 (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-003		M gC3LO 00 =	0.00000 (mg/s)	
mass flux of liner leakage from Cat 3 sumps to SW-003		M gC3s 003 =	0.00000 (mg/s)	
mass flux of surface water into SW-004		M s4 =	(mg/s)	
mass flux of ground water into SW-004		M g4 =	2.50009 (mg/s)	
mass flux of seepage from East Pit to SW-004		M gep 004 =	#N/A (mg/s)	
mass flux of seepage from West Pit		M gwp =	#N/A (mg/s)	
mass flux of liner leakage from Cat 3 stockpile to SW-004		M gC3 004 =	- (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-004		M gC3LO 00 =	0.00000 (mg/s)	
mass flux of liner leakage from Cat 4 stockpile		M gC4 =	0.00001 (mg/s)	
mass flux of liner leakage from Cat 4LO stockpile		M gC4LO =	0.00001 (mg/s)	
mass flux of seepage from Overburden (Storage)		M gOS =	0.48453 (mg/s)	
mass flux of liner leakage from Cat 3LO sumps to SW-004		M gC3LOs 0 =	0.00000 (mg/s)	
mass flux of liner leakage from Cat 4 sumps		M gC4s =	0.00000 (mg/s)	
mass flux of liner leakage from LOSEP sumps		M gC4LOs =	0.00000 (mg/s)	
mass flux of seepage from Overburden Ponds - PW1		M gOp1 =	0.11981 (mg/s)	
mass flux of leakage from Haul Road Pond - PW2		M gHRp2 =	0.00011 (mg/s)	
mass flux of leakage from Haul Road Pond - PW4		M gHRp4 =	0.00023 (mg/s)	
mass flux of leakage from RTH Pond - PW3		M gRTHp =	0.00000 (mg/s)	
mass flux of liner leakage from WWTF pond		M gWTFp =	0.00022 (mg/s)	
mass flux of surface water into SW-004A		M s4A =	- (mg/s)	
mass flux of ground water into SW-004A		M g4A =	10.99489 (mg/s)	
mass flux of West Pit overflow		M sms =	#N/A (mg/s)	
mass flux of liner leakage from Cat 1/2 stockpile		M gC12 =	- (mg/s)	
mass flux of liner leakage from Cat 1/2 sumps		M gC12s =	0.00000 (mg/s)	
mass flux of seepage from Overburden (Cat 1/2)		M gO12 =	0.64119 (mg/s)	
mass flux of seepage from Overburden Pond - PW7		M gOp7 =	0.22509 (mg/s)	
mass flux of surface water into SW-005		M s5 =	- (mg/s)	
mass flux of ground water into SW-005		M g5 =	17.98748 (mg/s)	
mass flux of surface water into USGS Gage		M s6 =	- (mg/s)	
mass flux of ground water into USGS Gage		M g6 =	3.72428 (mg/s)	
mass flux of surface water into Colby Lake		M scl =	- (mg/s)	
mass flux of ground water into Colby Lake		M gcl =	9.27108 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP		M shl =	0.77259 (mg/s)	
			Low Flow	
Mass balance at each node	mass flux in river at SW-001	M r1 =	5.3883 (mg/s)	
	mass flux in river at SW-002	M r2 =	8.0594 (mg/s)	
	mass flux in river at SW-003	M r3 =	8.9026 (mg/s)	
	mass flux in river at SW-004	M r4 =	12.0076 (mg/s)	
	mass flux in river at SW-004A	M r4A =	23.8688 (mg/s)	
	mass flux in river at SW-005	M r5 =	41.8563 (mg/s)	
	mass flux in river at USGS Gage	M r6 =	45.5806 (mg/s)	
mass flux into Colby Lake	M cl =	55.6242 (mg/s)		
			Low Flow	
Convert mass flux to concentration	concentration in river at SW-001	C r1 =	0.16136 (mg/L)	
	concentration in river at SW-002	C r2 =	0.18772 (mg/L)	
	concentration in river at SW-003	C r3 =	0.19377 (mg/L)	
	concentration in river at SW-004	C r4 =	0.20856 (mg/L)	
	concentration in river at SW-004A	C r4A =	0.24019 (mg/L)	
	concentration in river at SW-005	C r5 =	0.25582 (mg/L)	
	concentration in river at USGS Gage	C r6 =	0.25764 (mg/L)	
concentration in Colby Lake	C cl =	0.09671 (mg/L)		

Partridge River Mass-Balance Model - Mine Site - Propped Action

Case		Year 5	
Parameter		Iron	
Input concentration data	concentration of surface water into SW-001	C_s1 =	1.6000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	1.6000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	1.6000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	1.6000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	1.6000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	1.6000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	1.6000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	1.6000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	1.6000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0300 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	2.8440 (mg/L)
	concentration of ground water into SW-002	C_g2 =	2.8440 (mg/L)
	concentration of ground water into SW-003	C_g3 =	2.8440 (mg/L)
	concentration of ground water into SW-004	C_g4 =	2.8440 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	2.8440 (mg/L)
	concentration of ground water into SW-005	C_g5 =	2.8440 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	2.8440 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	2.8440 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.8100 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.8100 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.8100 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	235.0000 (mg/L)
	concentration of liner leakage from Cat 4LO stockpile	C_gC4LO =	235.0000 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.2255 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.1500 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.8100 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.8100 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.8100 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	235.0000 (mg/L)
	concentration of liner leakage from LOSEP sumps	C_gC4LOs =	235.0000 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.2255 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	0.2255 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	2.8440 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	2.8440 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	2.8440 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	74.0000 (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	14.48734 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.84900 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	27.13077 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	8.56433 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00025 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00006 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	25.39374 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00006 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.02034 (mg/s)
	mass flux of liner leakage from Cat 4LO stockpile	M_gC4LO =	0.03092 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.48801 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00011 (mg/s)
	mass flux of liner leakage from LOSEP sumps	M_gC4LOs =	0.00021 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.12067 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00108 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00232 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00187 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	111.67672 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00002 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.22900 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	0.22671 (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	182.70140 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	37.82804 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	94.16768 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	17.65920 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	15.3363 (mg/s)
	mass flux in river at SW-002	M_r2 =	42.4671 (mg/s)
	mass flux in river at SW-003	M_r3 =	51.0317 (mg/s)
	mass flux in river at SW-004	M_r4 =	77.0911 (mg/s)
	mass flux in river at SW-004A	M_r4A =	189.2235 (mg/s)
	mass flux in river at SW-005	M_r5 =	371.9249 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	409.7530 (mg/s)
	mass flux into Colby Lake	M_cl =	521.5798 (mg/s)
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C_r1 =	0.45925 (mg/L)
	concentration in river at SW-002	C_r2 =	0.98913 (mg/L)
	concentration in river at SW-003	C_r3 =	1.11070 (mg/L)
	concentration in river at SW-004	C_r4 =	1.33897 (mg/L)
	concentration in river at SW-004A	C_r4A =	1.90414 (mg/L)
	concentration in river at SW-005	C_r5 =	2.27316 (mg/L)
	concentration in river at USGS Gage	C_r6 =	2.31608 (mg/L)
	concentration in Colby Lake	C_cl =	1.71143 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case	Year 5		
Parameter	Hardness		
Input concentration data	concentration of surface water into SW-001	C_s1 =	110.0000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	110.0000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	110.0000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	110.0000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	110.0000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	110.0000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	110.0000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	110.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	110.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	110.0000 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	66.4200 (mg/L)
	concentration of ground water into SW-002	C_g2 =	66.4200 (mg/L)
	concentration of ground water into SW-003	C_g3 =	66.4200 (mg/L)
	concentration of ground water into SW-004	C_g4 =	66.4200 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	66.4200 (mg/L)
	concentration of ground water into SW-005	C_g5 =	66.4200 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	66.4200 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	66.4200 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	739.8602 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	1,729.3495 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	1,729.3495 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	3,263.2136 (mg/L)
	concentration of liner leakage from Cat 4LO stockpile	C_gC4LO =	1,075.2134 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	43.5200 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	71.5000 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	739.8602 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	1,729.3495 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_g3LOs =	1,729.3495 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	3,263.2136 (mg/L)
	concentration of liner leakage from LOSEP sumps	C_gC4LOs =	1,075.2134 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	43.5200 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	43.5200 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	66.4200 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	66.4200 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	66.4200 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	1,565.0000 (mg/L)
	Convert concentration to mass flux	Low Flow	
mass flux of surface water into SW-001		M_s1 =	- (mg/s)
mass flux of ground water into SW-001		M_g1 =	338.34348 (mg/s)
mass flux of surface discharges from upstream of PM-1		M_sns =	3,113.00000 (mg/s)
mass flux of surface water into SW-002		M_s2 =	- (mg/s)
mass flux of ground water into SW-002		M_g2 =	633.62374 (mg/s)
mass flux of surface water into SW-003		M_s3 =	- (mg/s)
mass flux of ground water into SW-003		M_g3 =	200.01496 (mg/s)
mass flux of seepage from East Pit to SW-003		M_gep_003 =	#N/A (mg/s)
mass flux of liner leakage from Cat 3 stockpile to SW-003		M_gC3_003 =	0.54353 (mg/s)
mass flux of liner leakage from Cat 3LO stockpile to SW-003		M_gC3LO_00 =	0.12559 (mg/s)
mass flux of liner leakage from Cat 3 sumps to SW-003		M_gC3s_003 =	0.00091 (mg/s)
mass flux of surface water into SW-004		M_s4 =	- (mg/s)
mass flux of ground water into SW-004		M_g4 =	593.05624 (mg/s)
mass flux of seepage from East Pit to SW-004		M_gep_004 =	#N/A (mg/s)
mass flux of seepage from West Pit		M_gwp =	#N/A (mg/s)
mass flux of liner leakage from Cat 3 stockpile to SW-004		M_gC3_004 =	- (mg/s)
mass flux of liner leakage from Cat 3LO stockpile to SW-004		M_gC3LO_00 =	0.12559 (mg/s)
mass flux of liner leakage from Cat 4 stockpile		M_gC4 =	0.28240 (mg/s)
mass flux of liner leakage from Cat 4LO stockpile		M_gC4LO =	0.14146 (mg/s)
mass flux of seepage from Overburden (Storage)		M_gOS =	94.18314 (mg/s)
mass flux of liner leakage from Cat 3LO sumps to SW-004		M_gC3LOs_0 =	0.00170 (mg/s)
mass flux of liner leakage from Cat 4 sumps		M_gC4s =	0.00149 (mg/s)
mass flux of liner leakage from LOSEP sumps		M_gC4LOs =	0.00098 (mg/s)
mass flux of seepage from Overburden Ponds - PW1		M_gOp1 =	23.28806 (mg/s)
mass flux of leakage from Haul Road Pond - PW2		M_gHRp2 =	0.02527 (mg/s)
mass flux of leakage from Haul Road Pond - PW4		M_gHRp4 =	0.05414 (mg/s)
mass flux of leakage from RTH Pond - PW3		M_gRTHp =	0.00002 (mg/s)
mass flux of liner leakage from WWTF pond		M_gWTFp =	0.03951 (mg/s)
mass flux of surface water into SW-004A		M_s4A =	- (mg/s)
mass flux of ground water into SW-004A		M_g4A =	2,608.14612 (mg/s)
mass flux of West Pit overflow		M_sms =	#N/A (mg/s)
mass flux of liner leakage from Cat 1/2 stockpile		M_gC12 =	- (mg/s)
mass flux of liner leakage from Cat 1/2 sumps		M_gC12s =	0.01621 (mg/s)
mass flux of seepage from Overburden (Cat 1/2)		M_gO12 =	109.15444 (mg/s)
mass flux of seepage from Overburden Pond - PW7		M_gOp7 =	43.75333 (mg/s)
mass flux of surface water into SW-005		M_s5 =	- (mg/s)
mass flux of ground water into SW-005		M_g5 =	4,266.88722 (mg/s)
mass flux of surface water into USGS Gage		M_s6 =	- (mg/s)
mass flux of ground water into USGS Gage		M_g6 =	883.45242 (mg/s)
mass flux of surface water into Colby Lake	M_scl =	- (mg/s)	
mass flux of ground water into Colby Lake	M_gcl =	2,199.23262 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M_shl =	1,214.07000 (mg/s)	
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	3,451.3435 (mg/s)
	mass flux in river at SW-002	M_r2 =	4,084.9672 (mg/s)
	mass flux in river at SW-003	M_r3 =	4,285.6522 (mg/s)
	mass flux in river at SW-004	M_r4 =	4,996.8531 (mg/s)
	mass flux in river at SW-004A	M_r4A =	7,757.9232 (mg/s)
	mass flux in river at SW-005	M_r5 =	12,024.8104 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	12,908.2628 (mg/s)
	mass flux into Colby Lake	M_cl =	16,321.5655 (mg/s)
	Low Flow		
	concentration in river at SW-001	C_r1 =	103.35220 (mg/L)
	concentration in river at SW-002	C_r2 =	95.14604 (mg/L)
	concentration in river at SW-003	C_r3 =	93.27706 (mg/L)
	concentration in river at SW-004	C_r4 =	86.78852 (mg/L)
	concentration in river at SW-004A	C_r4A =	78.06751 (mg/L)
	concentration in river at SW-005	C_r5 =	73.49430 (mg/L)
	concentration in river at USGS Gage	C_r6 =	72.96244 (mg/L)
	concentration in Colby Lake	C_cl =	104.68433 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Propsed Action

Case		Year 5	
Parameter		Potassium	
Input concentration data	concentration of surface water into SW-001	C_s1 =	1.3000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	1.3000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	1.3000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	1.3000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	1.3000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	1.3000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	1.3000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	1.3000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	1.3000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	2.7000 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	1.7500 (mg/L)
	concentration of ground water into SW-002	C_g2 =	1.7500 (mg/L)
	concentration of ground water into SW-003	C_g3 =	1.7500 (mg/L)
	concentration of ground water into SW-004	C_g4 =	1.7500 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	1.7500 (mg/L)
	concentration of ground water into SW-005	C_g5 =	1.7500 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	1.7500 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	1.7500 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	49.0000 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	49.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	49.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	38.0000 (mg/L)
	concentration of liner leakage from Cat 4LO stockpile	C_gC4LO =	38.0000 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	2.2600 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	4.4500 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	49.0000 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	49.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	49.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	38.0000 (mg/L)
	concentration of liner leakage from LOSEP sumps	C_gC4LOs =	38.0000 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	2.2600 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	2.2600 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	1.7500 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	1.7500 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	1.7500 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	40.1000 (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	8.91450 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	76.41000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	16.69439 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	5.26989 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.01540 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00356 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00003 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	15.62554 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00356 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00329 (mg/s)
	mass flux of liner leakage from Cat 4LO stockpile	M_gC4LO =	0.00500 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	4.89094 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00005 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00002 (mg/s)
	mass flux of liner leakage from LOSEP sumps	M_gC4LOs =	0.00003 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	1.20935 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00067 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00143 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00101 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	68.71809 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00107 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	6.79353 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	2.27212 (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	112.42175 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	23.27675 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	57.94425 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	14.34810 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	85.3243 (mg/s)
	mass flux in river at SW-002	M_r2 =	102.0189 (mg/s)
	mass flux in river at SW-003	M_r3 =	107.3078 (mg/s)
	mass flux in river at SW-004	M_r4 =	129.0487 (mg/s)
	mass flux in river at SW-004A	M_r4A =	206.8335 (mg/s)
	mass flux in river at SW-005	M_r5 =	319.2552 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	342.5320 (mg/s)
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C_r1 =	2.55508 (mg/L)
	concentration in river at SW-002	C_r2 =	2.37620 (mg/L)
	concentration in river at SW-003	C_r3 =	2.33555 (mg/L)
	concentration in river at SW-004	C_r4 =	2.24140 (mg/L)
	concentration in river at SW-004A	C_r4A =	2.08135 (mg/L)
	concentration in river at SW-005	C_r5 =	1.95125 (mg/L)
	concentration in river at USGS Gage	C_r6 =	1.93612 (mg/L)
	concentration in Colby Lake	C_cl =	1.38493 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Propped Action

Case	Year 5		
Parameter	Magnesium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	8.0000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	8.0000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	8.0000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	8.0000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	8.0000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	8.0000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	8.0000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	8.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	8.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	10.5000 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	8.0200 (mg/L)
	concentration of ground water into SW-002	C_g2 =	8.0200 (mg/L)
	concentration of ground water into SW-003	C_g3 =	8.0200 (mg/L)
	concentration of ground water into SW-004	C_g4 =	8.0200 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	8.0200 (mg/L)
	concentration of ground water into SW-005	C_g5 =	8.0200 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	8.0200 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	8.0200 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	41.4440 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	93.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	93.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	516.7845 (mg/L)
	concentration of liner leakage from Cat 4LO stockpile	C_gC4LO =	170.2780 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	4.8800 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	9.0100 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	41.4440 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	93.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	93.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	516.7845 (mg/L)
	concentration of liner leakage from LOSEP sumps	C_gC4LOs =	170.2780 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	4.8800 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	4.8800 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	8.0200 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	8.0200 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	8.0200 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	141.0000 (mg/L)
	Convert concentration to mass flux	Low Flow	
mass flux of surface water into SW-001		M_s1 =	- (mg/s)
mass flux of ground water into SW-001		M_g1 =	40.85388 (mg/s)
mass flux of surface discharges from upstream of PM-1		M_sns =	297.15000 (mg/s)
mass flux of surface water into SW-002		M_s2 =	- (mg/s)
mass flux of ground water into SW-002		M_g2 =	76.50802 (mg/s)
mass flux of surface water into SW-003		M_s3 =	- (mg/s)
mass flux of ground water into SW-003		M_g3 =	24.15116 (mg/s)
mass flux of seepage from East Pit to SW-003		M_gep_003 =	#N/A (mg/s)
mass flux of liner leakage from Cat 3 stockpile to SW-003		M_gC3_003 =	0.02923 (mg/s)
mass flux of liner leakage from Cat 3LO stockpile to SW-003		M_gC3LO_00 =	0.00675 (mg/s)
mass flux of liner leakage from Cat 3 sumps to SW-003		M_gC3s_003 =	0.00005 (mg/s)
mass flux of surface water into SW-004		M_s4 =	- (mg/s)
mass flux of ground water into SW-004		M_g4 =	71.60962 (mg/s)
mass flux of seepage from East Pit to SW-004		M_gep_004 =	#N/A (mg/s)
mass flux of seepage from West Pit		M_gwp =	#N/A (mg/s)
mass flux of liner leakage from Cat 3 stockpile to SW-004		M_gC3_004 =	- (mg/s)
mass flux of liner leakage from Cat 3LO stockpile to SW-004		M_gC3LO_00 =	0.00675 (mg/s)
mass flux of liner leakage from Cat 4 stockpile		M_gC4 =	0.04472 (mg/s)
mass flux of liner leakage from Cat 4LO stockpile		M_gC4LO =	0.02240 (mg/s)
mass flux of seepage from Overburden (Storage)		M_gOS =	10.56098 (mg/s)
mass flux of liner leakage from Cat 3LO sumps to SW-004		M_gC3LOs_0 =	0.00009 (mg/s)
mass flux of liner leakage from Cat 4 sumps		M_gC4s =	0.00024 (mg/s)
mass flux of liner leakage from LOSEP sumps		M_gC4LOs =	0.00016 (mg/s)
mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	2.61135 (mg/s)	
mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00305 (mg/s)	
mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00654 (mg/s)	
mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)	
mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00356 (mg/s)	
mass flux of surface water into SW-004A	M_s4A =	- (mg/s)	
mass flux of ground water into SW-004A	M_g4A =	314.92520 (mg/s)	
mass flux of West Pit overflow	M_sms =	#N/A (mg/s)	
mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	- (mg/s)	
mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00091 (mg/s)	
mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	13.75499 (mg/s)	
mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	4.90616 (mg/s)	
mass flux of surface water into SW-005	M_s5 =	- (mg/s)	
mass flux of ground water into SW-005	M_g5 =	515.21282 (mg/s)	
mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)	
mass flux of ground water into USGS Gage	M_g6 =	106.67402 (mg/s)	
mass flux of surface water into Colby Lake	M_scl =	- (mg/s)	
mass flux of ground water into Colby Lake	M_gcl =	265.55022 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M_shl =	88.29600 (mg/s)	
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	338.0039 (mg/s)
	mass flux in river at SW-002	M_r2 =	414.5119 (mg/s)
	mass flux in river at SW-003	M_r3 =	438.6991 (mg/s)
	mass flux in river at SW-004	M_r4 =	523.5686 (mg/s)
	mass flux in river at SW-004A	M_r4A =	857.1558 (mg/s)
	mass flux in river at SW-005	M_r5 =	1,372.3687 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	1,479.0427 (mg/s)
	mass flux into Colby Lake	M_cl =	1,832.8889 (mg/s)
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C_r1 =	10.12169 (mg/L)
	concentration in river at SW-002	C_r2 =	9.65471 (mg/L)
	concentration in river at SW-003	C_r3 =	9.54827 (mg/L)
	concentration in river at SW-004	C_r4 =	9.09367 (mg/L)
	concentration in river at SW-004A	C_r4A =	8.62551 (mg/L)
	concentration in river at SW-005	C_r5 =	8.38776 (mg/L)
	concentration in river at USGS Gage	C_r6 =	8.36012 (mg/L)
	concentration in Colby Lake	C_cl =	8.04285 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Propsed Action

Case		Year 5	
Parameter		Manganese	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.1500 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.1500 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.1500 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.1500 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.1500 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.1500 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.1500 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.1500 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.1500 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0086 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.1240 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.1240 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.1240 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.1240 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.1240 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.1240 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.1240 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.1240 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.3109 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.7500 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.7500 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	36.2741 (mg/L)
	concentration of liner leakage from Cat 4LO stockpile	C_gC4LO =	11.9521 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.1604 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.1160 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.3109 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.7500 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.7500 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	36.2741 (mg/L)
	concentration of liner leakage from LOSEP sumps	C_gC4LOs =	11.9521 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.1604 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	0.1604 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.1240 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.1240 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.1240 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	6.2200 (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.63166 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.24338 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	1.18292 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.37341 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00024 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00005 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	1.10718 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00005 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00314 (mg/s)
	mass flux of liner leakage from Cat 4LO stockpile	M_gC4LO =	0.00157 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.34711 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00002 (mg/s)
	mass flux of liner leakage from LOSEP sumps	M_gC4LOs =	0.00001 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.08583 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00005 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00010 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00016 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	4.86917 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.17709 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	0.16125 (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	7.96588 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	1.64932 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	4.10576 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	1.65555 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	0.8750 (mg/s)
	mass flux in river at SW-002	M_r2 =	2.0580 (mg/s)
	mass flux in river at SW-003	M_r3 =	2.4317 (mg/s)
	mass flux in river at SW-004	M_r4 =	3.9769 (mg/s)
	mass flux in river at SW-004A	M_r4A =	9.1844 (mg/s)
	mass flux in river at SW-005	M_r5 =	17.1503 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	18.7996 (mg/s)
	mass flux into Colby Lake	M_cl =	24.5609 (mg/s)
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C_r1 =	0.02620 (mg/L)
	concentration in river at SW-002	C_r2 =	0.04793 (mg/L)
	concentration in river at SW-003	C_r3 =	0.05292 (mg/L)
	concentration in river at SW-004	C_r4 =	0.06907 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.09242 (mg/L)
	concentration in river at SW-005	C_r5 =	0.10482 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.10626 (mg/L)
	concentration in Colby Lake	C_cl =	0.14428 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Propsed Action

Case	Year 5			
Parameter	Sodium			
Input concentration data	concentration of surface water into SW-001	C s1 =	2.5000 (mg/L)	
	concentration of surface water into SW-002	C s2 =	2.5000 (mg/L)	
	concentration of surface water into SW-003	C s3 =	2.5000 (mg/L)	
	concentration of surface water into SW-004	C s4 =	2.5000 (mg/L)	
	concentration of surface water into SW-004A	C s4A =	2.5000 (mg/L)	
	concentration of surface water into SW-005	C s5 =	2.5000 (mg/L)	
	concentration of surface water into USGS Gage	C s6 =	2.5000 (mg/L)	
	concentration of surface water into Colby Lake	C scl =	2.5000 (mg/L)	
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	2.5000 (mg/L)	
	concentration of surface water discharges from upstream of PM-1	C sns =	4.8000 (mg/L)	
	concentration of West Pit overflow	C sms =	#N/A (mg/L)	
	concentration of ground water into SW-001	C g1 =	13.3300 (mg/L)	
	concentration of ground water into SW-002	C g2 =	13.3300 (mg/L)	
	concentration of ground water into SW-003	C g3 =	13.3300 (mg/L)	
	concentration of ground water into SW-004	C g4 =	13.3300 (mg/L)	
	concentration of ground water into SW-004A	C g4A =	13.3300 (mg/L)	
	concentration of ground water into SW-005	C g5 =	13.3300 (mg/L)	
	concentration of ground water into USGS Gage	C g6 =	13.3300 (mg/L)	
	concentration of ground water into Colby Lake	C gcl =	13.3300 (mg/L)	
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)	
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)	
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	232.3350 (mg/L)	
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	681.0000 (mg/L)	
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	681.0000 (mg/L)	
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	195.2732 (mg/L)	
	concentration of liner leakage from Cat 4LO stockpile	C gC4LO =	64.3416 (mg/L)	
	concentration of seepage from Overburden (Storage)	C gOS =	4.6000 (mg/L)	
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	7.1900 (mg/L)	
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	232.3350 (mg/L)	
	concentration of liner leakage from Cat 3 sumps	C gC3s =	681.0000 (mg/L)	
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	681.0000 (mg/L)	
	concentration of liner leakage from Cat 4 sumps	C gC4s =	195.2732 (mg/L)	
	concentration of liner leakage from LOSEP sumps	C gC4LOs =	64.3416 (mg/L)	
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	4.6000 (mg/L)	
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	4.6000 (mg/L)	
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	13.3300 (mg/L)	
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	13.3300 (mg/L)	
	concentration of leakage from RTH Pond - PW3	C gRTHp =	13.3300 (mg/L)	
	concentration of liner leakage from WWTF ponc	C_gWTFp =	358.0000 (mg/L)	
	Low Flow			
	Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	(mg/s)
		mass flux of ground water into SW-001	M g1 =	67.90302 (mg/s)
		mass flux of surface discharges from upstream of PM-1	M sns =	135.84000 (mg/s)
		mass flux of surface water into SW-002	M s2 =	(mg/s)
mass flux of ground water into SW-002		M g2 =	127.16357 (mg/s)	
mass flux of surface water into SW-003		M s3 =	(mg/s)	
mass flux of ground water into SW-003		M g3 =	40.14151 (mg/s)	
mass flux of seepage from East Pit to SW-003		M gep 003 =	#N/A (mg/s)	
mass flux of liner leakage from Cat 3 stockpile to SW-003		M gC3 003 =	0.21404 (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-003		M gC3LO 00 =	0.04946 (mg/s)	
mass flux of liner leakage from Cat 3 sumps to SW-003		M gC3s 003 =	0.00036 (mg/s)	
mass flux of surface water into SW-004		M s4 =	(mg/s)	
mass flux of ground water into SW-004		M g4 =	119.02198 (mg/s)	
mass flux of seepage from East Pit to SW-004		M gep 004 =	#N/A (mg/s)	
mass flux of seepage from West Pit		M gwp =	#N/A (mg/s)	
mass flux of liner leakage from Cat 3 stockpile to SW-004		M gC3 004 =	- (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-004		M gC3LO 00 =	0.04946 (mg/s)	
mass flux of liner leakage from Cat 4 stockpile		M gC4 =	0.01690 (mg/s)	
mass flux of liner leakage from Cat 4LO stockpile		M gC4LO =	0.00847 (mg/s)	
mass flux of seepage from Overburden (Storage)		M gOS =	9.95502 (mg/s)	
mass flux of liner leakage from Cat 3LO sumps to SW-004		M gC3LOs 0 =	0.00067 (mg/s)	
mass flux of liner leakage from Cat 4 sumps		M gC4s =	0.00009 (mg/s)	
mass flux of liner leakage from LOSEP sumps		M gC4LOs =	0.00006 (mg/s)	
mass flux of seepage from Overburden Ponds - PW1		M gOp1 =	2.46151 (mg/s)	
mass flux of leakage from Haul Road Pond - PW2		M gHRp2 =	0.00507 (mg/s)	
mass flux of leakage from Haul Road Pond - PW4		M gHRp4 =	0.01087 (mg/s)	
mass flux of leakage from RTH Pond - PW3		M gRTHp =	0.00000 (mg/s)	
mass flux of liner leakage from WWTF pond		M gWTFp =	0.00904 (mg/s)	
mass flux of surface water into SW-004A		M s4A =	- (mg/s)	
mass flux of ground water into SW-004A		M g4A =	523.43553 (mg/s)	
mass flux of West Pit overflow		M sms =	#N/A (mg/s)	
mass flux of liner leakage from Cat 1/2 stockpile		M gC12 =	- (mg/s)	
mass flux of liner leakage from Cat 1/2 sumps		M gC12s =	0.00509 (mg/s)	
mass flux of seepage from Overburden (Cat 1/2)		M gO12 =	10.97651 (mg/s)	
mass flux of seepage from Overburden Pond - PW7		M gOp7 =	4.62466 (mg/s)	
mass flux of surface water into SW-005		M s5 =	- (mg/s)	
mass flux of ground water into SW-005		M g5 =	856.33253 (mg/s)	
mass flux of surface water into USGS Gage		M s6 =	- (mg/s)	
mass flux of ground water into USGS Gage		M g6 =	177.30233 (mg/s)	
mass flux of surface water into Colby Lake		M scl =	- (mg/s)	
mass flux of ground water into Colby Lake		M gcl =	441.36963 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP		M shl =	27.59250 (mg/s)	
Low Flow				
Mass balance at each node		mass flux in river at SW-001	M r1 =	203.7430 (mg/s)
	mass flux in river at SW-002	M r2 =	330.9066 (mg/s)	
	mass flux in river at SW-003	M r3 =	371.3120 (mg/s)	
	mass flux in river at SW-004	M r4 =	502.8514 (mg/s)	
	mass flux in river at SW-004A	M r4A =	1,041.8932 (mg/s)	
	mass flux in river at SW-005	M r5 =	1,898.2258 (mg/s)	
	mass flux in river at USGS Gage	M r6 =	2,075.5281 (mg/s)	
mass flux into Colby Lake	M cl =	2,544.4902 (mg/s)		
Low Flow				
Convert mass flux to concentration	concentration in river at SW-001	C r1 =	6.10119 (mg/L)	
	concentration in river at SW-002	C r2 =	7.70739 (mg/L)	
	concentration in river at SW-003	C r3 =	8.08159 (mg/L)	
	concentration in river at SW-004	C r4 =	8.73384 (mg/L)	
	concentration in river at SW-004A	C r4A =	10.48451 (mg/L)	
	concentration in river at SW-005	C r5 =	11.60174 (mg/L)	
	concentration in river at USGS Gage	C r6 =	11.73168 (mg/L)	
	concentration in Colby Lake	C cl =	3.82384 (mg/L)	

Partridge River Mass-Balance Model - Mine Site - Propsed Action

Case	Year 5			
Parameter	Nickel			
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0016 (mg/L)	
	concentration of surface water into SW-002	C_s2 =	0.0016 (mg/L)	
	concentration of surface water into SW-003	C_s3 =	0.0016 (mg/L)	
	concentration of surface water into SW-004	C_s4 =	0.0016 (mg/L)	
	concentration of surface water into SW-004A	C_s4A =	0.0016 (mg/L)	
	concentration of surface water into SW-005	C_s5 =	0.0016 (mg/L)	
	concentration of surface water into USGS Gage	C_s6 =	0.0016 (mg/L)	
	concentration of surface water into Colby Lake	C_scl =	0.0016 (mg/L)	
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0033 (mg/L)	
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0016 (mg/L)	
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)	
	concentration of ground water into SW-001	C_g1 =	0.0163 (mg/L)	
	concentration of ground water into SW-002	C_g2 =	0.0163 (mg/L)	
	concentration of ground water into SW-003	C_g3 =	0.0163 (mg/L)	
	concentration of ground water into SW-004	C_g4 =	0.0163 (mg/L)	
	concentration of ground water into SW-004A	C_g4A =	0.0163 (mg/L)	
	concentration of ground water into SW-005	C_g5 =	0.0163 (mg/L)	
	concentration of ground water into USGS Gage	C_g6 =	0.0163 (mg/L)	
	concentration of ground water into Colby Lake	C_gcl =	0.0163 (mg/L)	
	concentration of ground water seepage from East Pit	C_ggp =	#N/A (mg/L)	
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)	
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0923 (mg/L)	
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.8600 (mg/L)	
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.8600 (mg/L)	
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	196.0497 (mg/L)	
	concentration of liner leakage from Cat 4LO stockpile	C_gC4LO =	64.5975 (mg/L)	
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0080 (mg/L)	
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0190 (mg/L)	
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0923 (mg/L)	
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.8600 (mg/L)	
	concentration of liner leakage from Cat 3LO sumps	C_g3LOs =	0.8600 (mg/L)	
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	196.0497 (mg/L)	
	concentration of liner leakage from LOSEP sumps	C_gC4LOs =	64.5975 (mg/L)	
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0080 (mg/L)	
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	0.0080 (mg/L)	
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0163 (mg/L)	
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0163 (mg/L)	
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0163 (mg/L)	
	concentration of liner leakage from WWTF pond	C_gWTFp =	26.4000 (mg/L)	
	Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	(mg/s)
		mass flux of ground water into SW-001	M_g1 =	0.08293 (mg/s)
mass flux of surface discharges from upstream of PM-1		M_sns =	0.04387 (mg/s)	
mass flux of surface water into SW-002		M_s2 =	(mg/s)	
mass flux of ground water into SW-002		M_g2 =	0.15531 (mg/s)	
mass flux of surface water into SW-003		M_s3 =	(mg/s)	
mass flux of ground water into SW-003		M_g3 =	0.04903 (mg/s)	
mass flux of seepage from East Pit to SW-003		M_gep_003 =	#N/A (mg/s)	
mass flux of liner leakage from Cat 3 stockpile to SW-003		M_gC3_003 =	0.00027 (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-003		M_gC3LO_00 =	0.00006 (mg/s)	
mass flux of liner leakage from Cat 3 sumps to SW-003		M_gC3s_003 =	0.00000 (mg/s)	
mass flux of surface water into SW-004		M_s4 =	(mg/s)	
mass flux of ground water into SW-004		M_g4 =	0.14536 (mg/s)	
mass flux of seepage from East Pit to SW-004		M_gep_004 =	#N/A (mg/s)	
mass flux of seepage from West Pit		M_gwp =	#N/A (mg/s)	
mass flux of liner leakage from Cat 3 stockpile to SW-004		M_gC3_004 =	- (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-004		M_gC3LO_00 =	0.00006 (mg/s)	
mass flux of liner leakage from Cat 4 stockpile		M_gC4 =	0.01697 (mg/s)	
mass flux of liner leakage from Cat 4LO stockpile		M_gC4LO =	0.00850 (mg/s)	
mass flux of seepage from Overburden (Storage)		M_gOS =	0.01725 (mg/s)	
mass flux of liner leakage from Cat 3LO sumps to SW-004		M_gC3LOs_0 =	0.00000 (mg/s)	
mass flux of liner leakage from Cat 4 sumps		M_gC4s =	0.00009 (mg/s)	
mass flux of liner leakage from LOSEP sumps		M_gC4LOs =	0.00006 (mg/s)	
mass flux of seepage from Overburden Ponds - PW1		M_gOp1 =	0.00426 (mg/s)	
mass flux of leakage from Haul Road Pond - PW2		M_gHRp2 =	0.00001 (mg/s)	
mass flux of leakage from Haul Road Pond - PW4		M_gHRp4 =	0.00001 (mg/s)	
mass flux of leakage from RTH Pond - PW3		M_gRTHp =	0.00000 (mg/s)	
mass flux of liner leakage from WWTF pond		M_gWTFp =	0.00067 (mg/s)	
mass flux of surface water into SW-004A		M_s4A =	- (mg/s)	
mass flux of ground water into SW-004A		M_g4A =	0.63927 (mg/s)	
mass flux of West Pit overflow		M_sms =	#N/A (mg/s)	
mass flux of liner leakage from Cat 1/2 stockpile		M_gC12 =	- (mg/s)	
mass flux of liner leakage from Cat 1/2 sumps		M_gC12s =	0.00000 (mg/s)	
mass flux of seepage from Overburden (Cat 1/2)		M_gO12 =	0.02901 (mg/s)	
mass flux of seepage from Overburden Pond - PW7		M_gOp7 =	0.00801 (mg/s)	
mass flux of surface water into SW-005		M_s5 =	- (mg/s)	
mass flux of ground water into SW-005		M_g5 =	1.04584 (mg/s)	
mass flux of surface water into USGS Gage		M_s6 =	- (mg/s)	
mass flux of ground water into USGS Gage		M_g6 =	0.21654 (mg/s)	
mass flux of surface water into Colby Lake		M_scl =	- (mg/s)	
mass flux of ground water into Colby Lake		M_gcl =	0.53905 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP		M_shl =	0.03642 (mg/s)	
Mass balance at each node	mass flux in river at SW-001	M_r1 =	0.1268 (mg/s)	
	mass flux in river at SW-002	M_r2 =	0.2821 (mg/s)	
	mass flux in river at SW-003	M_r3 =	0.3315 (mg/s)	
	mass flux in river at SW-004	M_r4 =	0.5247 (mg/s)	
	mass flux in river at SW-004A	M_r4A =	1.2010 (mg/s)	
	mass flux in river at SW-005	M_r5 =	2.2468 (mg/s)	
	mass flux in river at USGS Gage	M_r6 =	2.4634 (mg/s)	
mass flux into Colby Lake	M_cl =	3.0388 (mg/s)		
Convert mass flux to concentration	concentration in river at SW-001	C_r1 =	0.00380 (mg/L)	
	concentration in river at SW-002	C_r2 =	0.00657 (mg/L)	
	concentration in river at SW-003	C_r3 =	0.00721 (mg/L)	
	concentration in river at SW-004	C_r4 =	0.00911 (mg/L)	
	concentration in river at SW-004A	C_r4A =	0.01209 (mg/L)	
	concentration in river at SW-005	C_r5 =	0.01373 (mg/L)	
	concentration in river at USGS Gage	C_r6 =	0.01392 (mg/L)	
	concentration in Colby Lake	C_cl =	0.00335 (mg/L)	

**Partridge River Mass-Balance Model - Mine Site - Proposed Action**

Case	Year 5		
Parameter	Lead		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0005 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0005 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0005 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0005 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0005 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0005 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0005 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0005 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0005 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0002 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0011 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0011 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0011 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0011 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0011 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0011 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0011 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0011 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0110 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.0319 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0432 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0528 (mg/L)
	concentration of liner leakage from Cat 4LO stockpile	C_gC4LO =	0.0528 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0007 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0110 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.0319 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_g3LOs =	0.0432 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0528 (mg/L)
	concentration of liner leakage from LOSEP sumps	C_gC4LOs =	0.0528 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0007 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	0.0007 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0011 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0011 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0011 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	0.0380 (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00571 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.00425 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.01068 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00337 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.01000 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4LO stockpile	M_gC4LO =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00146 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSEP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00036 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00000 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.04398 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	0.00068 (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.07195 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.01490 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.03708 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00552 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	0.0100 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.0206 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.0240 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.0359 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.0805 (mg/s)
	mass flux in river at SW-005	M_r5 =	0.1525 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	0.1674 (mg/s)
	mass flux into Colby Lake	M_cl =	0.2100 (mg/s)
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C_r1 =	0.00030 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00048 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00052 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00062 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00081 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00093 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00095 (mg/L)
	concentration in Colby Lake	C_cl =	0.00057 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Propsed Action

Case	Year 5		
Parameter	Antimony		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0015 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0015 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0015 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0015 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0015 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0015 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0015 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0015 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0015 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0015 (mg/L)
	concentration of West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0015 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0015 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0015 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0015 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0015 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0015 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0015 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0015 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	0.0800 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	0.0800 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0800 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0800 (mg/L)
	concentration of liner leakage from Cat 4LO stockpile	C gC4LO =	0.0271 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0003 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	0.0004 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	0.0800 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C gC3s =	0.0800 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.0800 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0800 (mg/L)
	concentration of liner leakage from LOSEP sumps	C gC4LOs =	0.0271 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0003 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	0.0003 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0015 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0015 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0015 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	0.0765 (mg/L)

Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M s1 =	(mg/s)
	mass flux of ground water into SW-001	M g1 =	0.00764 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.04245 (mg/s)
	mass flux of surface water into SW-002	M s2 =	(mg/s)
	mass flux of ground water into SW-002	M g2 =	0.01431 (mg/s)
	mass flux of surface water into SW-003	M s3 =	(mg/s)
	mass flux of ground water into SW-003	M g3 =	0.00452 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep 003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M gC3 003 =	0.00003 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO 00 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M gC3s 003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	(mg/s)
	mass flux of ground water into SW-004	M g4 =	0.01339 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep 004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M gC3 004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO 00 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 4LO stockpile	M gC4LO =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.00065 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs 0 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSEP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.00016 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00000 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.05890 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M gO12 =	0.00061 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	0.00030 (mg/s)
	mass flux of surface water into SW-005	M s5 =	- (mg/s)
	mass flux of ground water into SW-005	M g5 =	0.09636 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.01995 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	0.04967 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.01656 (mg/s)

Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M r1 =	0.0501 (mg/s)
	mass flux in river at SW-002	M r2 =	0.0644 (mg/s)
	mass flux in river at SW-003	M r3 =	0.0689 (mg/s)
	mass flux in river at SW-004	M r4 =	0.0832 (mg/s)
	mass flux in river at SW-004A	M r4A =	0.1430 (mg/s)
	mass flux in river at SW-005	M r5 =	0.2393 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M r6 =	0.2593 (mg/s)
	mass flux into Colby Lake	M cl =	0.3255 (mg/s)
	Low Flow		
	concentration in river at SW-001	C r1 =	0.00150 (mg/L)
	concentration in river at SW-002	C r2 =	0.00150 (mg/L)
	concentration in river at SW-003	C r3 =	0.00150 (mg/L)
	concentration in river at SW-004	C r4 =	0.00144 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00144 (mg/L)
	concentration in river at SW-005	C r5 =	0.00146 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00147 (mg/L)
	concentration in Colby Lake	C cl =	0.00150 (mg/L)

**Partridge River Mass-Balance Model - Mine Site - Propsed Action**

Case		Year 5	
Parameter		Selenium	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0005 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0005 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0005 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0005 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0005 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0005 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0005 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0005 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0005 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0005 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0019 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0019 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0019 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0019 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0019 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0019 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0019 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0019 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0029 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.0029 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0029 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0029 (mg/L)
	concentration of liner leakage from Cat 4LO stockpile	C_gC4LO =	0.0029 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0004 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0019 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0029 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.0029 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0029 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0029 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0029 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0004 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	0.0004 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0019 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0019 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0019 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0100 (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00973 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.01415 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.01822 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00575 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.01705 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4LO stockpile	M_gC4LO =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00096 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00024 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00000 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.07500 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.00290 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	0.00045 (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.12270 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.02540 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.06324 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00552 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	0.0239 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.0421 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.0479 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.0661 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.1445 (mg/s)
	mass flux in river at SW-005	M_r5 =	0.2672 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	0.2926 (mg/s)
	mass flux into Colby Lake	M_cl =	0.3613 (mg/s)
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C_r1 =	0.00072 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00098 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00104 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00115 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00145 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00163 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00165 (mg/L)
	concentration in Colby Lake	C_cl =	0.00067 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case	Year 5		
Parameter	sulfate		
Input concentration data	concentration of surface water into SW-001	C_s1 =	9.0000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	9.0000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	9.0000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	9.0000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	9.0000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	9.0000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	9.0000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	9.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	9.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	22.0000 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	16.1300 (mg/L)
	concentration of ground water into SW-002	C_g2 =	16.1300 (mg/L)
	concentration of ground water into SW-003	C_g3 =	16.1300 (mg/L)
	concentration of ground water into SW-004	C_g4 =	16.1300 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	16.1300 (mg/L)
	concentration of ground water into SW-005	C_g5 =	16.1300 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	16.1300 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	16.1300 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	513.6199 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	2,340.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	2,340.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	9,600.0000 (mg/L)
	concentration of liner leakage from Cat 4LO stockpile	C_gC4LO =	6,755.0321 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	35.1700 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	68.3000 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	513.6199 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	2,340.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_g3LOs =	2,340.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	9,600.0000 (mg/L)
	concentration of liner leakage from LOSEP sumps	C_gC4LOs =	6,755.0321 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	35.1700 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	35.1700 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	16.1300 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	16.1300 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	16.1300 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	2,914.0000 (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	82.16622 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	622.60000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	153.87460 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	48.57334 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.73545 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.16994 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00123 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	144.02284 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.16994 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.83079 (mg/s)
	mass flux of liner leakage from Cat 4LO stockpile	M_gC4LO =	0.88873 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	76.11262 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00230 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00438 (mg/s)
	mass flux of liner leakage from LOSEP sumps	M_gC4LOs =	0.00616 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	18.81988 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00614 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.01315 (mg/s)
mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)	
mass flux of liner leakage from WWTF pond	M_gWTFp =	0.07356 (mg/s)	
mass flux of surface water into SW-004A	M_s4A =	- (mg/s)	
mass flux of ground water into SW-004A	M_g4A =	633.38448 (mg/s)	
mass flux of West Pit overflow	M_sms =	#N/A (mg/s)	
mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	- (mg/s)	
mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.01125 (mg/s)	
mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	104.26921 (mg/s)	
mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	35.35856 (mg/s)	
mass flux of surface water into SW-005	M_s5 =	- (mg/s)	
mass flux of ground water into SW-005	M_g5 =	1,036.20733 (mg/s)	
mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)	
mass flux of ground water into USGS Gage	M_g6 =	214.54513 (mg/s)	
mass flux of surface water into Colby Lake	M_scl =	- (mg/s)	
mass flux of ground water into Colby Lake	M_gcl =	534.08043 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M_shl =	99.33300 (mg/s)	
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	704.7662 (mg/s)
	mass flux in river at SW-002	M_r2 =	858.6408 (mg/s)
	mass flux in river at SW-003	M_r3 =	908.1208 (mg/s)
	mass flux in river at SW-004	M_r4 =	1,149.0725 (mg/s)
	mass flux in river at SW-004A	M_r4A =	1,922.0960 (mg/s)
	mass flux in river at SW-005	M_r5 =	2,958.3033 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	3,172.8484 (mg/s)
	mass flux into Colby Lake	M_cl =	3,806.2619 (mg/s)
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C_r1 =	21.10458 (mg/L)
	concentration in river at SW-002	C_r2 =	19.99925 (mg/L)
	concentration in river at SW-003	C_r3 =	19.76521 (mg/L)
	concentration in river at SW-004	C_r4 =	19.95782 (mg/L)
	concentration in river at SW-004A	C_r4A =	19.34193 (mg/L)
	concentration in river at SW-005	C_r5 =	18.08082 (mg/L)
	concentration in river at USGS Gage	C_r6 =	17.93415 (mg/L)
	concentration in Colby Lake	C_cl =	10.21177 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case		Year 5	
Parameter		Thallium	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0004 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0004 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0004 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0004 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0004 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0004 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0004 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0004 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0004 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0003 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0000 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0000 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0000 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0000 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0000 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0000 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0000 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0000 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0000 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0001 (mg/L)
	concentration of liner leakage from Cat 4LO stockpile	C_gC4LO =	0.0001 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0000 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0000 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0001 (mg/L)
	concentration of liner leakage from LOSEP sumps	C_gC4LOs =	0.0001 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0000 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	0.0000 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0000 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0000 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0000 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0072 (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00002 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.00809 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.00004 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00001 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.00004 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4LO stockpile	M_gC4LO =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00009 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSEP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00002 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00000 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.00016 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	0.00004 (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.00026 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.00005 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.00013 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00441 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	0.0081 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.0082 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.0082 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.0083 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.0085 (mg/s)
	mass flux in river at SW-005	M_r5 =	0.0088 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	0.0088 (mg/s)
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C_r1 =	0.00024 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00019 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00018 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00014 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00009 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00005 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00005 (mg/L)
	concentration in Colby Lake	C_cl =	0.00035 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Propsed Action

Case	Year 5		
Parameter	Vanadium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0009 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0009 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0009 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0009 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0009 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0009 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0009 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0009 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0009 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0043 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0043 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0043 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0043 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0043 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0043 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0043 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0043 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0043 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.3402 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.4532 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.6139 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0399 (mg/L)
	concentration of liner leakage from Cat 4LO stockpile	C_gC4LO =	0.0131 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0017 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0014 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.3402 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.4532 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_g3LOs =	0.6139 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0399 (mg/L)
	concentration of liner leakage from LOSEP sumps	C_gC4LOs =	0.0131 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0017 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	0.0017 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0043 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0043 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0043 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.4915 (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.02190 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.12169 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.04102 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.01295 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00014 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00004 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.03839 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00004 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4LO stockpile	M_gC4LO =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00374 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSEP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00093 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00001 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.16885 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.00214 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	0.00174 (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.27624 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
mass flux of ground water into USGS Gage	M_g6 =	0.05719 (mg/s)	
mass flux of surface water into Colby Lake	M_scl =	- (mg/s)	
mass flux of ground water into Colby Lake	M_gcl =	0.14238 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00993 (mg/s)	
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	0.1438 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.1846 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.1978 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.2409 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.4136 (mg/s)
	mass flux in river at SW-005	M_r5 =	0.6899 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	0.7470 (mg/s)
	mass flux into Colby Lake	M_cl =	0.8994 (mg/s)
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C_r1 =	0.00430 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00430 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00430 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00418 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00416 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00422 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00422 (mg/L)
	concentration in Colby Lake	C_cl =	0.00137 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Propsed Action

Case		Year 5	
Parameter		Zinc	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0160 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0160 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0160 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0160 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0160 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0160 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0160 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0160 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0620 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0073 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0275 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0275 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0275 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0275 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0275 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0275 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0275 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0275 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0900 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.0900 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0900 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	26.0000 (mg/L)
	concentration of liner leakage from Cat 4LO stockpile	C_gC4LO =	26.0000 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0046 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0030 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0900 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.0900 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0900 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	26.0000 (mg/L)
	concentration of liner leakage from LOSEP sumps	C_gC4LOs =	26.0000 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0046 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	0.0046 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0275 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0275 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0275 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	7.8200 (mg/L)
Low Flow			
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.14009 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.20744 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.26234 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.08281 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00003 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.24554 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00225 (mg/s)
	mass flux of liner leakage from Cat 4LO stockpile	M_gC4LO =	0.00342 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00987 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00001 (mg/s)
	mass flux of liner leakage from LOSEP sumps	M_gC4LOs =	0.00002 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00244 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00001 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00002 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00020 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	1.07986 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.00458 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	0.00458 (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	1.76663 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.36578 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.91055 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.68429 (mg/s)
Low Flow			
Mass balance at each node	mass flux in river at SW-001	M_r1 =	0.3475 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.6099 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.6927 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.9565 (mg/s)
	mass flux in river at SW-004A	M_r4A =	2.0455 (mg/s)
	mass flux in river at SW-005	M_r5 =	3.8122 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	4.1779 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	5.7728 (mg/s)
	concentration in river at SW-001	C_r1 =	0.01041 (mg/L)
	concentration in river at SW-002	C_r2 =	0.01420 (mg/L)
	concentration in river at SW-003	C_r3 =	0.01508 (mg/L)
	concentration in river at SW-004	C_r4 =	0.01661 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.02058 (mg/L)
	concentration in river at SW-005	C_r5 =	0.02330 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.02362 (mg/L)
	concentration in Colby Lake	C_cl =	0.01748 (mg/L)

## Partridge River Mass-Balance--Mine Site-Proposed Action

### FLOWS

Case Flow	Year 5 Average Flow Conditions			
Total flow in Partridge River	flow in river at SW-001	Q_r1_M =	5.70	(cfs)
	flow in river at SW-002	Q_r2_M =	11.31	(cfs)
	flow in river at SW-003	Q_r3_M =	13.01	(cfs)
	flow in river at SW-004	Q_r4_M =	19.26	(cfs)
	flow in river at SW-004A	Q_r4a_M =	44.26	(cfs)
	flow in river at SW-005	Q_r5_M =	82.66	(cfs)
	flow in river at USGS Gage	Q_r6_M =	87.01	(cfs)
	total flow into Colby Lake	Q_cl_M =	112.13	(cfs)
	flow check	Q_ck_M =	112.13	(cfs)
input flow data	surface water flow into SW-001	Q_s1_M =	4.52	(cfs)
	surface water flow into SW-002	Q_s2_M =	5.27	(cfs)
	surface water flow into SW-003	Q_s3_M =	1.59	(cfs)
	surface water flow into SW-004	Q_s4_M =	5.84	(cfs)
	surface water flow into SW-004A	Q_s4a_M =	23.51	(cfs)
	surface water flow into SW-005	Q_s5_M =	36.13	(cfs)
	surface water flow into USGS Gage	Q_s6_M =	3.88	(cfs)
	surface water flow into Colby Lake	Q_scl_M =	23.56	(cfs)
	surface water inflow from Hoyt Lakes WWTP	Q_shl_M =	0.39	(cfs)
	surface water inflow from discharges upstream of PM-1	Q_sns_M =	1.00	(cfs)
	surface water flow from West Pit overflow	Q_sms_M =	-	(cfs)
	ground water flow into SW-001	Q_g1_M =	0.18	(cfs)
	ground water flow into SW-002	Q_g2_M =	0.34	(cfs)
	ground water flow into SW-003	Q_g3_M =	0.11	(cfs)
	ground water flow into SW-004	Q_g4_M =	0.32	(cfs)
	ground water flow into SW-004A	Q_g4a_M =	1.39	(cfs)
	ground water flow into SW-005	Q_g5_M =	2.27	(cfs)
	ground water flow into USGS Gage	Q_g6_M =	0.47	(cfs)
	ground water flow into Colby Lake	Q_gcl_M =	1.17	(cfs)
	ground water seepage from East Pit to SW-003	Q_gep_003_M =	-	(cfs)
	ground water seepage from East Pit to SW-004	Q_gep_004_M =	-	(cfs)
	ground water seepage from West Pit	Q_gwp_M =	-	(cfs)
	ground water liner leakage from Cat 1/2 stockpile	Q_gC12_M =	-	(cfs)
	ground water liner leakage from Cat 3 stockpile to SW-003	Q_gC3_003_M =	0.0000	(cfs)
	ground water liner leakage from Cat 3 stockpile to SW-004	Q_gC3_004_M =	-	(cfs)
	ground water liner leakage from Cat 3LO stockpile to SW-003	Q_gC3LO_003_M =	0.0000	(cfs)
	ground water liner leakage from Cat 3LO stockpile to SW-004	Q_gC3LO_004_M =	0.0000	(cfs)
	ground water liner leakage from Cat 4 stockpile	Q_gC4_M =	0.0000	(cfs)
	ground water liner leakage from LO SP	Q_gC4LO_M =	0.0000	(cfs)
	ground water seepage from Overburden Storage	Q_gOS_M =	0.0765	(cfs)
	ground water seepage from Overburden (Cat 1/2)	Q_gO12_M =	0.0636	(cfs)
	ground water liner leakage from Cat 1/2 sumps	Q_gC12s_M =	0.0000	(cfs)
	ground water liner leakage from Cat 3 sumps	Q_gC3s_M =	0.0000	(cfs)
	ground water liner leakage from Cat 3LO sumps	Q_gC3LOs_M =	0.0000	(cfs)
	ground water liner leakage from Cat 4 sumps	Q_gC4s_M =	0.0000	(cfs)
	ground water liner leakage from LO SP sumps	Q_gC4LOs_M =	0.0000	(cfs)
	ground water seepage from Overburden pond - PW1	Q_gOp1_M =	0.0189	(cfs)
	ground water seepage from Overburden pond - PW7	Q_gOp7_M =	0.0355	(cfs)
	ground water leakage from Haul Road pond - PW2	Q_gHRp2_M =	0.0000	(cfs)
	ground water leakage from Haul Road pond - PW4	Q_gHRp4_M =	0.0000	(cfs)
	ground water leakage from RTH pond - PW3	Q_gRTHp_M =	0.0000	(cfs)
	ground water liner leakage from WWTF pond	Q_gWTFp_M =	0.000001	(cfs)

Partridge River Mass-Balance--Mine Site-Proposed Action

Case	Year 5		
Parameter	Silver		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0001 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0001 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0001 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0001 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0001 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0001 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0001 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0001 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0001 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0001 (mg/L)
	concentration of West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0006 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0006 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0006 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0006 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0006 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0006 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0006 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0006 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	0.0007 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	0.0007 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0007 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0007 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.0007 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	- (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	0.0007 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C gC3s =	0.0007 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.0007 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0007 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0007 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	- (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	- (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0006 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0006 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0006 (mg/L)
	concentration of liner leakage from WWTF pond	C gWTFp =	0.0043 (mg/L)
Convert concentration to mass flux	Average Flow		
	mass flux of surface water into SW-001	M s1 =	0.01279 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.00280 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.00340 (mg/s)
	mass flux of surface water into SW-002	M s2 =	0.01493 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.00525 (mg/s)
	mass flux of surface water into SW-003	M s3 =	0.00449 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.00166 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep 003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M gC3 003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO 003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M gC3s 003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	0.01654 (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.00491 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep 004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M gC3 004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO 004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	- (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs 004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00000 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	0.06654 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.02160 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	- (mg/s)
	mass flux of surface water into SW-005	M s5 =	0.10224 (mg/s)
	mass flux of ground water into SW-005	M g5 =	0.03533 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	0.01098 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.00732 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	0.06667 (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	0.01821 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.00110 (mg/s)
Mass balance at each node	Average Flow		
	mass flux in river at SW-001	M r1 =	0.0190 (mg/s)
	mass flux in river at SW-002	M r2 =	0.0392 (mg/s)
	mass flux in river at SW-003	M r3 =	0.0453 (mg/s)
	mass flux in river at SW-004	M r4 =	0.0669 (mg/s)
	mass flux in river at SW-004A	M r4A =	0.1549 (mg/s)
	mass flux in river at SW-005	M r5 =	0.2925 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M r6 =	0.3108 (mg/s)
	mass flux into Colby Lake	M cl =	0.3968 (mg/s)
	Average Flow		
	concentration in river at SW-001	C r1 =	0.00012 (mg/L)
	concentration in river at SW-002	C r2 =	0.00012 (mg/L)
	concentration in river at SW-003	C r3 =	0.00012 (mg/L)
	concentration in river at SW-004	C r4 =	0.00012 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00012 (mg/L)
	concentration in river at SW-005	C r5 =	0.00013 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00013 (mg/L)
	concentration in Colby Lake	C cl =	0.00013 (mg/L)

Partridge River Mass-Balance--Mine Site-Proposed Action

Case		Year 5	
Parameter		Aluminum	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0700 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0700 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0700 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0700 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0700 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0700 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0700 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0700 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0700 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0173 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.1250 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.1250 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.1250 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.1250 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.1250 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.1250 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.1250 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.1250 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	1.6800 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	1.6800 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	1.6800 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	83.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	39.0404 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.4106 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.1400 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	1.6800 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	1.6800 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	1.6800 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	83.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	39.0404 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.4106 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	0.4106 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.1250 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.1250 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.1250 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	16.3000 (mg/L)
		Average Flow	
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	8.95493 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.63675 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.48959 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	10.44842 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	1.19246 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	3.14515 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.37642 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00089 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00020 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	11.57762 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	1.11611 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00020 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.01171 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00840 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.88859 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00004 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00004 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.21972 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00005 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00010 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00041 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	46.57623 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	4.90844 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00004 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.25196 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	0.41280 (mg/s)
	mass flux of surface water into SW-005	M_s5 =	71.57016 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	8.03013 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	7.68582 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	1.66263 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	46.67236 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	4.13888 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.77259 (mg/s)
		Average Flow	
Mass balance at each node	mass flux in river at SW-001	M_r1 =	10.0813 (mg/s)
	mass flux in river at SW-002	M_r2 =	21.7222 (mg/s)
	mass flux in river at SW-003	M_r3 =	25.2448 (mg/s)
	mass flux in river at SW-004	M_r4 =	39.0678 (mg/s)
	mass flux in river at SW-004A	M_r4A =	91.2173 (mg/s)
	mass flux in river at SW-005	M_r5 =	170.8160 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	180.1660 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	231.7498 (mg/s)
			Average Flow
	concentration in river at SW-001	C_r1 =	0.06249 (mg/L)
	concentration in river at SW-002	C_r2 =	0.06786 (mg/L)
	concentration in river at SW-003	C_r3 =	0.06859 (mg/L)
	concentration in river at SW-004	C_r4 =	0.07167 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.07283 (mg/L)
	concentration in river at SW-005	C_r5 =	0.07302 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.07317 (mg/L)
	concentration in Colby Lake	C_cl =	0.07303 (mg/L)



Partridge River Mass-Balance--Mine Site-Proposed Action

Case	Year 5		
Parameter	Arsenic		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0021 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0021 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0021 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0021 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0021 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0021 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0021 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0021 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0021 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0065 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0022 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0022 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0022 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0022 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0022 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0022 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0022 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0022 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.4927 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.7100 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.7100 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.1292 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0426 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0016 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0027 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.4927 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.7100 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.7100 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.1292 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0426 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0016 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	0.0016 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0022 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0022 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0022 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.3900 (mg/L)
Convert concentration to mass flux	Average Flow		
	mass flux of surface water into SW-001	M_s1 =	0.26993 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.01100 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.18395 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	0.31495 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.02061 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.09480 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00650 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00038 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00009 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.34898 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.01929 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00009 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00002 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00338 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00083 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00001 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	1.40394 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.08482 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.00486 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	0.00157 (mg/s)
	mass flux of surface water into SW-005	M_s5 =	2.15733 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.13876 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.23167 (mg/s)
mass flux of ground water into USGS Gage	M_g6 =	0.02873 (mg/s)	
mass flux of surface water into Colby Lake	M_scl =	1.40684 (mg/s)	
mass flux of ground water into Colby Lake	M_gcl =	0.07152 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.02329 (mg/s)	
Mass balance at each node	Average Flow		
	mass flux in river at SW-001	M_r1 =	0.4649 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.8004 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.9022 (mg/s)
	mass flux in river at SW-004	M_r4 =	1.2748 (mg/s)
	mass flux in river at SW-004A	M_r4A =	2.7700 (mg/s)
	mass flux in river at SW-005	M_r5 =	5.0661 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	5.3265 (mg/s)
	mass flux into Colby Lake	M_cl =	6.8281 (mg/s)
Convert mass flux to concentration	Average Flow		
	concentration in river at SW-001	C_r1 =	0.00288 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00250 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00245 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00234 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00221 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00217 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00216 (mg/L)
	concentration in Colby Lake	C_cl =	0.00215 (mg/L)

Partridge River Mass-Balance--Mine Site-Proposed Action

Case	Year 5		
Parameter	Boron		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0450 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0450 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0450 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0450 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0450 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0450 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0450 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0450 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0450 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0960 (mg/L)
	concentration of West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0870 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0870 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0870 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0870 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0870 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0870 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0870 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0870 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	0.4076 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	0.7600 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.7600 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.7600 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.7600 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0622 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	0.0370 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	0.4076 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C gC3s =	0.7600 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.7600 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.7600 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.7600 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0622 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	0.0622 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0870 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0870 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0870 (mg/L)
	concentration of liner leakage from WWTF ponc	C gWTFp =	0.9200 (mg/L)
			Average Flow
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	5.75674 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.44318 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	2.71680 (mg/s)
	mass flux of surface water into SW-002	M s2 =	6.71684 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.82995 (mg/s)
	mass flux of surface water into SW-003	M s3 =	2.02188 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.26199 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M gC3_003 =	0.00040 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00009 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	7.44275 (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.77681 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00009 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00011 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00016 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.13461 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.03328 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00003 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00007 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00002 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	29.94186 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	3.41627 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M gC12s =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M gO12 =	0.06659 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	0.06253 (mg/s)
	mass flux of surface water into SW-005	M s5 =	46.00939 (mg/s)
	mass flux of ground water into SW-005	M g5 =	5.58897 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	4.94089 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	1.15719 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	30.00366 (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	2.88066 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.49667 (mg/s)
			Average Flow
Mass balance at each node	mass flux in river at SW-001	M r1 =	8.9167 (mg/s)
	mass flux in river at SW-002	M r2 =	16.4635 (mg/s)
	mass flux in river at SW-003	M r3 =	18.7479 (mg/s)
	mass flux in river at SW-004	M r4 =	27.1358 (mg/s)
	mass flux in river at SW-004A	M r4A =	60.6231 (mg/s)
	mass flux in river at SW-005	M r5 =	112.2214 (mg/s)
	mass flux in river at USGS Gage	M r6 =	118.3195 (mg/s)
mass flux into Colby Lake	M cl =	151.7005 (mg/s)	
			Average Flow
Convert mass flux to concentration	concentration in river at SW-001	C r1 =	0.05527 (mg/L)
	concentration in river at SW-002	C r2 =	0.05143 (mg/L)
	concentration in river at SW-003	C r3 =	0.05094 (mg/L)
	concentration in river at SW-004	C r4 =	0.04978 (mg/L)
	concentration in river at SW-004A	C r4A =	0.04840 (mg/L)
	concentration in river at SW-005	C r5 =	0.04797 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.04805 (mg/L)
	concentration in Colby Lake	C cl =	0.04781 (mg/L)

Partridge River Mass-Balance--Mine Site-Proposed Action

Case		Year 5	
Parameter		Barium	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0077 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0077 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0077 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0077 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0077 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0077 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0077 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0077 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0077 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0050 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0219 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0219 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0219 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0219 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0219 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0219 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0219 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0219 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.1900 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.1900 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.1900 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.1900 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.1900 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0168 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0140 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.1900 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.1900 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.1900 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.1900 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.1900 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0168 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	0.0168 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0219 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0219 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0219 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.2300 (mg/L)
Convert concentration to mass flux	Average Flow		
	mass flux of surface water into SW-001	M_s1 =	0.98248 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.11166 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.14150 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	1.14634 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.20911 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.34507 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.06601 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00010 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00002 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	1.27023 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.19572 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00002 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00003 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00004 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.03643 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00901 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00001 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00002 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00001 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	5.11008 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.86074 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.02520 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	0.01692 (mg/s)
	mass flux of surface water into SW-005	M_s5 =	7.85227 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	1.40816 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.84324 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.29156 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	5.12062 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.72579 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.08476 (mg/s)
Mass balance at each node	Average Flow		
	mass flux in river at SW-001	M_r1 =	1.2358 (mg/s)
	mass flux in river at SW-002	M_r2 =	2.5911 (mg/s)
	mass flux in river at SW-003	M_r3 =	3.0023 (mg/s)
	mass flux in river at SW-004	M_r4 =	4.5138 (mg/s)
	mass flux in river at SW-004A	M_r4A =	10.5267 (mg/s)
	mass flux in river at SW-005	M_r5 =	19.7872 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	20.9220 (mg/s)
	mass flux into Colby Lake	M_cl =	26.8532 (mg/s)
Convert mass flux to concentration	Average Flow		
	concentration in river at SW-001	C_r1 =	0.00766 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00809 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00816 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00828 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00840 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00846 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00850 (mg/L)
	concentration in Colby Lake	C_cl =	0.00846 (mg/L)

Partridge River Mass-Balance--Mine Site-Proposed Action

Case	Year 5			
Parameter	Beryllium			
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0001 (mg/L)	
	concentration of surface water into SW-002	C s2 =	0.0001 (mg/L)	
	concentration of surface water into SW-003	C s3 =	0.0001 (mg/L)	
	concentration of surface water into SW-004	C s4 =	0.0001 (mg/L)	
	concentration of surface water into SW-004A	C s4A =	0.0001 (mg/L)	
	concentration of surface water into SW-005	C s5 =	0.0001 (mg/L)	
	concentration of surface water into USGS Gage	C s6 =	0.0001 (mg/L)	
	concentration of surface water into Colby Lake	C scl =	0.0001 (mg/L)	
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0001 (mg/L)	
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0001 (mg/L)	
	concentration of West Pit overflow	C sms =	#N/A (mg/L)	
	concentration of ground water into SW-001	C g1 =	0.0001 (mg/L)	
	concentration of ground water into SW-002	C g2 =	0.0001 (mg/L)	
	concentration of ground water into SW-003	C g3 =	0.0001 (mg/L)	
	concentration of ground water into SW-004	C g4 =	0.0001 (mg/L)	
	concentration of ground water into SW-004A	C g4A =	0.0001 (mg/L)	
	concentration of ground water into SW-005	C g5 =	0.0001 (mg/L)	
	concentration of ground water into USGS Gage	C g6 =	0.0001 (mg/L)	
	concentration of ground water into Colby Lake	C gcl =	0.0001 (mg/L)	
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)	
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)	
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	0.0002 (mg/L)	
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	0.0002 (mg/L)	
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0002 (mg/L)	
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0023 (mg/L)	
	concentration of liner leakage from LOSP	C gC4LO =	0.0023 (mg/L)	
	concentration of seepage from Overburden (Storage)	C gOS =	- (mg/L)	
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	- (mg/L)	
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	0.0002 (mg/L)	
	concentration of liner leakage from Cat 3 sumps	C gC3s =	0.0002 (mg/L)	
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.0002 (mg/L)	
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0023 (mg/L)	
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0023 (mg/L)	
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	- (mg/L)	
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	- (mg/L)	
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0001 (mg/L)	
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0001 (mg/L)	
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0001 (mg/L)	
	concentration of liner leakage from WWTF ponc	C_gWTFp =	0.0020 (mg/L)	
			Average Flow	
	Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	0.01279 (mg/s)
mass flux of ground water into SW-001		M g1 =	0.00074 (mg/s)	
mass flux of surface discharges from upstream of PM-1		M sns =	0.00283 (mg/s)	
mass flux of surface water into SW-002		M s2 =	0.01493 (mg/s)	
mass flux of ground water into SW-002		M g2 =	0.00138 (mg/s)	
mass flux of surface water into SW-003		M s3 =	0.00449 (mg/s)	
mass flux of ground water into SW-003		M g3 =	0.00044 (mg/s)	
mass flux of seepage from East Pit to SW-003		M gep 003 =	#N/A (mg/s)	
mass flux of liner leakage from Cat 3 stockpile to SW-003		M gC3 003 =	0.00000 (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-003		M gC3LO 00 =	0.00000 (mg/s)	
mass flux of liner leakage from Cat 3 sumps to SW-003		M gC3s 003 =	0.00000 (mg/s)	
mass flux of surface water into SW-004		M s4 =	0.01654 (mg/s)	
mass flux of ground water into SW-004		M g4 =	0.00129 (mg/s)	
mass flux of seepage from East Pit to SW-004		M gep 004 =	#N/A (mg/s)	
mass flux of seepage from West Pit		M gwp =	#N/A (mg/s)	
mass flux of liner leakage from Cat 3 stockpile to SW-004		M gC3 004 =	- (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-004		M gC3LO 00 =	0.00000 (mg/s)	
mass flux of liner leakage from Cat 4 stockpile		M gC4 =	0.00000 (mg/s)	
mass flux of liner leakage from LOSP		M gC4LO =	0.00000 (mg/s)	
mass flux of seepage from Overburden (Storage)		M gOS =	- (mg/s)	
mass flux of liner leakage from Cat 3LO sumps to SW-004		M gC3LOs 0 =	0.00000 (mg/s)	
mass flux of liner leakage from Cat 4 sumps		M gC4s =	0.00000 (mg/s)	
mass flux of liner leakage from LOSP sumps		M gC4LOs =	0.00000 (mg/s)	
mass flux of seepage from Overburden Ponds - PW1		M gOp1 =	- (mg/s)	
mass flux of leakage from Haul Road Pond - PW2		M gHRp2 =	0.00000 (mg/s)	
mass flux of leakage from Haul Road Pond - PW4		M gHRp4 =	0.00000 (mg/s)	
mass flux of leakage from RTH Pond - PW3		M gRTHp =	0.00000 (mg/s)	
mass flux of liner leakage from WWTF pond		M gWTFp =	0.00000 (mg/s)	
mass flux of surface water into SW-004A		M s4A =	0.06654 (mg/s)	
mass flux of ground water into SW-004A		M g4A =	0.00569 (mg/s)	
mass flux of West Pit overflow		M sms =	#N/A (mg/s)	
mass flux of liner leakage from Cat 1/2 stockpile		M gC12 =	- (mg/s)	
mass flux of liner leakage from Cat 1/2 sumps		M gC12s =	0.00000 (mg/s)	
mass flux of seepage from Overburden (Cat 1/2)		M gO12 =	- (mg/s)	
mass flux of seepage from Overburden Pond - PW7		M gOp7 =	- (mg/s)	
mass flux of surface water into SW-005		M s5 =	0.10224 (mg/s)	
mass flux of ground water into SW-005		M g5 =	0.00931 (mg/s)	
mass flux of surface water into USGS Gage		M s6 =	0.01098 (mg/s)	
mass flux of ground water into USGS Gage		M g6 =	0.00193 (mg/s)	
mass flux of surface water into Colby Lake		M scl =	0.06667 (mg/s)	
mass flux of ground water into Colby Lake		M gcl =	0.00480 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP		M shl =	0.00110 (mg/s)	
		Average Flow		
Mass balance at each node	mass flux in river at SW-001	M r1 =	0.0164 (mg/s)	
	mass flux in river at SW-002	M r2 =	0.0327 (mg/s)	
	mass flux in river at SW-003	M r3 =	0.0376 (mg/s)	
	mass flux in river at SW-004	M r4 =	0.0554 (mg/s)	
	mass flux in river at SW-004A	M r4A =	0.1277 (mg/s)	
	mass flux in river at SW-005	M r5 =	0.2392 (mg/s)	
	mass flux in river at USGS Gage	M r6 =	0.2521 (mg/s)	
mass flux into Colby Lake	M cl =	0.3247 (mg/s)		
		Average Flow		
Convert mass flux to concentration	concentration in river at SW-001	C r1 =	0.00010 (mg/L)	
	concentration in river at SW-002	C r2 =	0.00010 (mg/L)	
	concentration in river at SW-003	C r3 =	0.00010 (mg/L)	
	concentration in river at SW-004	C r4 =	0.00010 (mg/L)	
	concentration in river at SW-004A	C r4A =	0.00010 (mg/L)	
	concentration in river at SW-005	C r5 =	0.00010 (mg/L)	
	concentration in river at USGS Gage	C r6 =	0.00010 (mg/L)	
	concentration in Colby Lake	C cl =	0.00010 (mg/L)	

Partridge River Mass-Balance--Mine Site-Proposed Action

Case	Year 5			
Parameter	Calcium			
Input concentration data	concentration of surface water into SW-001	C s1 =	17.0000 (mg/L)	
	concentration of surface water into SW-002	C s2 =	17.0000 (mg/L)	
	concentration of surface water into SW-003	C s3 =	17.0000 (mg/L)	
	concentration of surface water into SW-004	C s4 =	17.0000 (mg/L)	
	concentration of surface water into SW-004A	C s4A =	17.0000 (mg/L)	
	concentration of surface water into SW-005	C s5 =	17.0000 (mg/L)	
	concentration of surface water into USGS Gage	C s6 =	17.0000 (mg/L)	
	concentration of surface water into Colby Lake	C scl =	17.0000 (mg/L)	
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	17.0000 (mg/L)	
	concentration of surface water discharges from upstream of PM-1	C sns =	24.5000 (mg/L)	
	concentration of West Pit overflow	C sms =	#N/A (mg/L)	
	concentration of ground water into SW-001	C g1 =	14.7900 (mg/L)	
	concentration of ground water into SW-002	C g2 =	14.7900 (mg/L)	
	concentration of ground water into SW-003	C g3 =	14.7900 (mg/L)	
	concentration of ground water into SW-004	C g4 =	14.7900 (mg/L)	
	concentration of ground water into SW-004A	C g4A =	14.7900 (mg/L)	
	concentration of ground water into SW-005	C g5 =	14.7900 (mg/L)	
	concentration of ground water into USGS Gage	C g6 =	14.7900 (mg/L)	
	concentration of ground water into Colby Lake	C gcl =	14.7900 (mg/L)	
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)	
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)	
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	126.4091 (mg/L)	
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	540.0000 (mg/L)	
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	540.0000 (mg/L)	
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	262.8913 (mg/L)	
	concentration of liner leakage from LOSP	C gC4LO =	86.7160 (mg/L)	
	concentration of seepage from Overburden (Storage)	C gOS =	9.3700 (mg/L)	
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	15.8000 (mg/L)	
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	126.4091 (mg/L)	
	concentration of liner leakage from Cat 3 sumps	C gC3s =	540.0000 (mg/L)	
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	540.0000 (mg/L)	
	concentration of liner leakage from Cat 4 sumps	C gC4s =	262.8913 (mg/L)	
	concentration of liner leakage from LOSP sumps	C gC4LOs =	86.7160 (mg/L)	
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	9.3700 (mg/L)	
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	9.3700 (mg/L)	
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	14.7900 (mg/L)	
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	14.7900 (mg/L)	
	concentration of leakage from RTH Pond - PW3	C gRTHp =	14.7900 (mg/L)	
	concentration of liner leakage from WWTF ponc	C_gWTFp =	396.0000 (mg/L)	
		Average Flow		
mass flux of surface water into SW-001	M s1 =	2,174.76906 (mg/s)		
mass flux of ground water into SW-001	M g1 =	75.34026 (mg/s)		
mass flux of surface discharges from upstream of PM-1	M sns =	693.35000 (mg/s)		
mass flux of surface water into SW-002	M s2 =	2,537.47438 (mg/s)		
mass flux of ground water into SW-002	M g2 =	141.09146 (mg/s)		
mass flux of surface water into SW-003	M s3 =	763.82131 (mg/s)		
mass flux of ground water into SW-003	M g3 =	44.53811 (mg/s)		
mass flux of seepage from East Pit to SW-003	M gep 003 =	#N/A (mg/s)		
mass flux of liner leakage from Cat 3 stockpile to SW-003	M gC3_003 =	0.28528 (mg/s)		
mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_00 =	0.06547 (mg/s)		
mass flux of liner leakage from Cat 3 sumps to SW-003	M gC3s_003 =	0.00028 (mg/s)		
mass flux of surface water into SW-004	M s4 =	2,811.70732 (mg/s)		
mass flux of ground water into SW-004	M g4 =	132.05814 (mg/s)		
mass flux of seepage from East Pit to SW-004	M gep 004 =	#N/A (mg/s)		
mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)		
mass flux of liner leakage from Cat 3 stockpile to SW-004	M gC3_004 =	- (mg/s)		
mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_00 =	0.06547 (mg/s)		
mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.03711 (mg/s)		
mass flux of liner leakage from LOSP	M gC4LO =	0.01865 (mg/s)		
mass flux of seepage from Overburden (Storage)	M gOS =	20.27794 (mg/s)		
mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_0 =	0.00053 (mg/s)		
mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00012 (mg/s)		
mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00008 (mg/s)		
mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	5.01400 (mg/s)		
mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00563 (mg/s)		
mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.01206 (mg/s)		
mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)		
mass flux of liner leakage from WWTF pond	M gWTFp =	0.01000 (mg/s)		
mass flux of surface water into SW-004A	M s4A =	11,311.36915 (mg/s)		
mass flux of ground water into SW-004A	M g4A =	580.76605 (mg/s)		
mass flux of West Pit overflow	M sms =	#N/A (mg/s)		
mass flux of liner leakage from Cat 1/2 stockpile	M gC12 =	- (mg/s)		
mass flux of liner leakage from Cat 1/2 sumps	M gC12s =	0.00277 (mg/s)		
mass flux of seepage from Overburden (Cat 1/2)	M gO12 =	28.43527 (mg/s)		
mass flux of seepage from Overburden Pond - PW7	M gOp7 =	9.42024 (mg/s)		
mass flux of surface water into SW-005	M s5 =	17,381.32425 (mg/s)		
mass flux of ground water into SW-005	M g5 =	950.12439 (mg/s)		
mass flux of surface water into USGS Gage	M s6 =	1,866.55692 (mg/s)		
mass flux of ground water into USGS Gage	M g6 =	196.72179 (mg/s)		
mass flux of surface water into Colby Lake	M scl =	11,334.71600 (mg/s)		
mass flux of ground water into Colby Lake	M gcl =	489.71169 (mg/s)		
mass flux of surface water from Hoyt Lakes WWTP	M shl =	187.62900 (mg/s)		
Convert concentration to mass flux	Average Flow			
	mass flux in river at SW-001	M r1 =	2,943.4593 (mg/s)	
	mass flux in river at SW-002	M r2 =	5,622.0252 (mg/s)	
	mass flux in river at SW-003	M r3 =	6,430.7356 (mg/s)	
	mass flux in river at SW-004	M r4 =	9,399.9427 (mg/s)	
	mass flux in river at SW-004A	M r4A =	21,329.9361 (mg/s)	
	mass flux in river at SW-005	M r5 =	39,661.3848 (mg/s)	
Mass balance at each node	mass flux in river at USGS Gage	M r6 =	41,724.6635 (mg/s)	
	mass flux into Colby Lake	M cl =	53,736.7202 (mg/s)	
Convert mass flux to concentration	Average Flow			
	concentration in river at SW-001	C r1 =	18.24591 (mg/L)	
	concentration in river at SW-002	C r2 =	17.56200 (mg/L)	
	concentration in river at SW-003	C r3 =	17.47164 (mg/L)	
	concentration in river at SW-004	C r4 =	17.24471 (mg/L)	
	concentration in river at SW-004A	C r4A =	17.02936 (mg/L)	
	concentration in river at SW-005	C r5 =	16.95503 (mg/L)	
	concentration in river at USGS Gage	C r6 =	16.94534 (mg/L)	
concentration in Colby Lake			C cl =	16.93453 (mg/L)

Partridge River Mass-Balance--Mine Site-Proposed Action

Case		Year 5	
Parameter		Cadmium	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0001 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0001 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0001 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0001 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0001 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0001 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0001 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0001 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0001 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0001 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0001 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0001 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0001 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0001 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0001 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0001 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0001 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0001 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0002 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0149 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0149 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0001 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0002 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0149 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0149 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0001 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	0.0001 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0001 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0001 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0001 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0063 (mg/L)
		Average Flow	
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	0.01279 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00051 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.00283 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	0.01493 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.00095 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.00449 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00030 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.01654 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.00089 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00013 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00003 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00000 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	0.06654 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.00393 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	0.00006 (mg/s)
	mass flux of surface water into SW-005	M_s5 =	0.10224 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.00642 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.01098 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.00133 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	0.06667 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.00331 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00110 (mg/s)
		Average Flow	
Mass balance at each node	mass flux in river at SW-001	M_r1 =	0.0161 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.0320 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.0368 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.0544 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.1249 (mg/s)
	mass flux in river at SW-005	M_r5 =	0.2336 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	0.2459 (mg/s)
	mass flux into Colby Lake	M_cl =	0.3170 (mg/s)
		Average Flow	
Convert mass flux to concentration	concentration in river at SW-001	C_r1 =	0.00010 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00010 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00010 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00010 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00010 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00010 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00010 (mg/L)
	concentration in Colby Lake	C_cl =	0.00010 (mg/L)



Partridge River Mass-Balance--Mine Site-Proposed Action

Case Parameter	Year 5 Chloride		
Input concentration data	concentration of surface water into SW-001	C s1 =	8.0000 (mg/L)
	concentration of surface water into SW-002	C s2 =	8.0000 (mg/L)
	concentration of surface water into SW-003	C s3 =	8.0000 (mg/L)
	concentration of surface water into SW-004	C s4 =	8.0000 (mg/L)
	concentration of surface water into SW-004A	C s4A =	8.0000 (mg/L)
	concentration of surface water into SW-005	C s5 =	8.0000 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	8.0000 (mg/L)
	concentration of surface water into Colby Lake	C scl =	8.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	8.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	1.6000 (mg/L)
	concentration of West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	6.6000 (mg/L)
	concentration of ground water into SW-002	C g2 =	6.6000 (mg/L)
	concentration of ground water into SW-003	C g3 =	6.6000 (mg/L)
	concentration of ground water into SW-004	C g4 =	6.6000 (mg/L)
	concentration of ground water into SW-004A	C g4A =	6.6000 (mg/L)
	concentration of ground water into SW-005	C g5 =	6.6000 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	6.6000 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	6.6000 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	14.8372 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	8.6374 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	6.5928 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	9.4053 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.4726 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	5.3500 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	2.3300 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	14.8372 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C gC3s =	8.6374 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	6.5928 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	9.4053 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.4726 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	5.3500 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	5.3500 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	6.6000 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	6.6000 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	6.6000 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	27.7000 (mg/L)
		Average Flow	
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	1,023.42074 (mg/s)
	mass flux of ground water into SW-001	M g1 =	33.62040 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	45.28000 (mg/s)
	mass flux of surface water into SW-002	M s2 =	1,194.10559 (mg/s)
	mass flux of ground water into SW-002	M g2 =	62.96171 (mg/s)
	mass flux of surface water into SW-003	M s3 =	359.44532 (mg/s)
	mass flux of ground water into SW-003	M g3 =	19.87502 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep 003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M gC3 003 =	0.00456 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO 00 =	0.00080 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M gC3s 003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	1,323.15639 (mg/s)
	mass flux of ground water into SW-004	M g4 =	58.93061 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep 004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M gC3 004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO 00 =	0.00080 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00133 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00010 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	11.57812 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs 0 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	2.86285 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00251 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00538 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00070 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	5,322.99725 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	259.16538 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M gC12s =	0.00033 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M gO12 =	4.19330 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	5.37868 (mg/s)
	mass flux of surface water into SW-005	M s5 =	8,179.44670 (mg/s)
	mass flux of ground water into SW-005	M g5 =	423.99060 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	878.37973 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	87.78660 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	5,333.98400 (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	218.53260 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl =	88.29600 (mg/s)
		Average Flow	
Mass balance at each node	mass flux in river at SW-001	M r1 =	1,102.3211 (mg/s)
	mass flux in river at SW-002	M r2 =	2,359.3864 (mg/s)
	mass flux in river at SW-003	M r3 =	2,738.7141 (mg/s)
	mass flux in river at SW-004	M r4 =	4,135.2529 (mg/s)
	mass flux in river at SW-004A	M r4A =	9,726.9879 (mg/s)
	mass flux in river at SW-005	M r5 =	18,330.4252 (mg/s)
	mass flux in river at USGS Gage	M r6 =	19,296.5915 (mg/s)
mass flux into Colby Lake	M cl =	24,937.4041 (mg/s)	
		Average Flow	
Convert mass flux to concentration	concentration in river at SW-001	C r1 =	6.83307 (mg/L)
	concentration in river at SW-002	C r2 =	7.37022 (mg/L)
	concentration in river at SW-003	C r3 =	7.44080 (mg/L)
	concentration in river at SW-004	C r4 =	7.58635 (mg/L)
	concentration in river at SW-004A	C r4A =	7.76582 (mg/L)
	concentration in river at SW-005	C r5 =	7.83616 (mg/L)
	concentration in river at USGS Gage	C r6 =	7.83679 (mg/L)
concentration in Colby Lake	C cl =	7.85874 (mg/L)	

Partridge River Mass-Balance--Mine Site-Proposed Action

Case Parameter	Year 5 Cobalt		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0005 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0005 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0005 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0005 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0005 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0005 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0005 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0005 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0005 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0005 (mg/L)
	concentration of West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0017 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0017 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0017 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0017 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0017 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0017 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0017 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0017 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	0.0079 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	0.0520 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0520 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	9.2541 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	3.0525 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0011 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	0.0013 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	0.0079 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C gC3s =	0.0520 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.0520 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	9.2541 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	3.0525 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0011 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	0.0011 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0017 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0017 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0017 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	1.8200 (mg/L)
		Average Flow	
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	0.06396 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.00841 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.01415 (mg/s)
	mass flux of surface water into SW-002	M s2 =	0.07463 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.01574 (mg/s)
	mass flux of surface water into SW-003	M s3 =	0.02247 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.00497 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep 003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M gC3 003 =	0.00003 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO 00 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M gC3s 003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	0.08270 (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.01473 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep 004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M gC3 004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO 00 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00131 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00066 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.00240 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs 0 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.00059 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00005 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	0.33269 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.06479 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M gO12 =	0.00234 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	0.00112 (mg/s)
	mass flux of surface water into SW-005	M s5 =	0.51122 (mg/s)
	mass flux of ground water into SW-005	M g5 =	0.10600 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	0.05490 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.02195 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	0.33337 (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	0.05463 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.00552 (mg/s)
		Average Flow	
Mass balance at each node	mass flux in river at SW-001	M r1 =	0.0865 (mg/s)
	mass flux in river at SW-002	M r2 =	0.1769 (mg/s)
	mass flux in river at SW-003	M r3 =	0.2044 (mg/s)
	mass flux in river at SW-004	M r4 =	0.3068 (mg/s)
	mass flux in river at SW-004A	M r4A =	0.7077 (mg/s)
	mass flux in river at SW-005	M r5 =	1.3250 (mg/s)
	mass flux in river at USGS Gage	M r6 =	1.4018 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M cl =	1.7953 (mg/s)
		Average Flow	
Convert mass flux to concentration	concentration in river at SW-001	C r1 =	0.00054 (mg/L)
	concentration in river at SW-002	C r2 =	0.00055 (mg/L)
	concentration in river at SW-003	C r3 =	0.00056 (mg/L)
	concentration in river at SW-004	C r4 =	0.00056 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00057 (mg/L)
	concentration in river at SW-005	C r5 =	0.00057 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00057 (mg/L)
	concentration in Colby Lake	C cl =	0.00057 (mg/L)

**Partridge River Mass-Balance--Mine Site-Proposed Action**

Case Parameter	Year 5 Copper		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0017 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0017 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0017 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0017 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0017 (mg/L)
	concentration of surface water into USGS Gage	C_s5 =	0.0017 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0017 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0017 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0190 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0012 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0030 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0030 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0030 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0030 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0030 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0030 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0030 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0030 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0920 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.0920 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0920 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	1.6703 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.5510 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0214 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0170 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0920 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.0920 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0920 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	1.6703 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.5510 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0214 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	0.0214 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0030 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0030 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0030 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.3400 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	0.21748 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.01503 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.03509 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	0.25375 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.02814 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.07638 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00888 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00005 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.28117 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.02634 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00024 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00012 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.04640 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.01147 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00001 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	1.13114 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.11584 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.03059 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	0.02155 (mg/s)
	mass flux of surface water into SW-005	M_s5 =	1.73813 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.18951 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.18666 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.03924 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	1.13347 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.09768 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.20970 (mg/s)
Mass balance at each node	Average Flow		
	mass flux in river at SW-001	M_r1 =	0.2676 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.5495 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.6348 (mg/s)
	mass flux in river at SW-004	M_r4 =	1.0006 (mg/s)
	mass flux in river at SW-004A	M_r4A =	2.2997 (mg/s)
	mass flux in river at SW-005	M_r5 =	4.2273 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	4.4532 (mg/s)
	mass flux into Colby Lake	M_cl =	5.8941 (mg/s)
Convert mass flux to concentration	Average Flow		
	concentration in river at SW-001	C_r1 =	0.00166 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00172 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00172 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00184 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00184 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00181 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00181 (mg/L)
	concentration in Colby Lake	C_cl =	0.00186 (mg/L)

Partridge River Mass-Balance--Mine Site-Proposed Action

Case		Year 5	
Parameter		Fluoride	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0700 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0700 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0700 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0700 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0700 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0700 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0700 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0700 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0700 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.1400 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.2800 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.2800 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.2800 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.2800 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.2800 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.2800 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.2800 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.2800 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0628 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.0621 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0621 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0626 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0629 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.2239 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.4200 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0628 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.0621 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0621 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0626 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0629 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.2239 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	0.2239 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.2800 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.2800 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.2800 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	8.5600 (mg/L)
		Average Flow	
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	8.95493 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	1.42632 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	3.96200 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	10.44842 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	2.67110 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	3.14515 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.84318 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00003 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	11.57762 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	2.50009 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00001 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.48453 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.11981 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00011 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00023 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00022 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	46.57623 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	10.99489 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.75587 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	0.22509 (mg/s)
	mass flux of surface water into SW-005	M_s5 =	71.57016 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	17.98748 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	7.68582 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	3.72428 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	46.67236 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	9.27108 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.77259 (mg/s)
		Average Flow	
Mass balance at each node	mass flux in river at SW-001	M_r1 =	14.3433 (mg/s)
	mass flux in river at SW-002	M_r2 =	27.4628 (mg/s)
	mass flux in river at SW-003	M_r3 =	31.4511 (mg/s)
	mass flux in river at SW-004	M_r4 =	46.1338 (mg/s)
	mass flux in river at SW-004A	M_r4A =	104.6859 (mg/s)
	mass flux in river at SW-005	M_r5 =	194.2435 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	205.6536 (mg/s)
	mass flux into Colby Lake	M_cl =	262.3696 (mg/s)
		Average Flow	
Convert mass flux to concentration	concentration in river at SW-001	C_r1 =	0.08891 (mg/L)
	concentration in river at SW-002	C_r2 =	0.08579 (mg/L)
	concentration in river at SW-003	C_r3 =	0.08545 (mg/L)
	concentration in river at SW-004	C_r4 =	0.08463 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.08358 (mg/L)
	concentration in river at SW-005	C_r5 =	0.08304 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.08352 (mg/L)
	concentration in Colby Lake	C_cl =	0.08268 (mg/L)

Partridge River Mass-Balance--Mine Site-Proposed Action

Case	Year 5		
Parameter	Iron		
Input concentration data	concentration of surface water into SW-001	C_s1 =	1.6000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	1.6000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	1.6000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	1.6000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	1.6000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	1.6000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	1.6000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	1.6000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	1.6000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0300 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	2.8440 (mg/L)
	concentration of ground water into SW-002	C_g2 =	2.8440 (mg/L)
	concentration of ground water into SW-003	C_g3 =	2.8440 (mg/L)
	concentration of ground water into SW-004	C_g4 =	2.8440 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	2.8440 (mg/L)
	concentration of ground water into SW-005	C_g5 =	2.8440 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	2.8440 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	2.8440 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.8100 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.8100 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.8100 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	235.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	235.0000 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.2255 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.1500 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.8100 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.8100 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.8100 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	235.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	235.0000 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.2255 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	0.2255 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	2.8440 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	2.8440 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	2.8440 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	74.0000 (mg/L)
Convert concentration to mass flux	Average Flow		
	mass flux of surface water into SW-001	M_s1 =	204.68415 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	14.48734 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.84900 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	238.82112 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	27.13077 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	71.88906 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	8.56433 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00043 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00010 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	264.63128 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	25.39374 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00010 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.03317 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.05055 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.48801 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00011 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00021 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.12067 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00108 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00232 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00187 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	1,064.59945 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	111.67672 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00002 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.26996 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	0.22671 (mg/s)
	mass flux of surface water into SW-005	M_s5 =	1,635.88934 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	182.70140 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	175.67595 (mg/s)
mass flux of ground water into USGS Gage	M_g6 =	37.82804 (mg/s)	
mass flux of surface water into Colby Lake	M_scl =	1,066.79680 (mg/s)	
mass flux of ground water into Colby Lake	M_gcl =	94.16768 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M_shl =	17.65920 (mg/s)	
Mass balance at each node	Average Flow		
	mass flux in river at SW-001	M_r1 =	220.0205 (mg/s)
	mass flux in river at SW-002	M_r2 =	485.9724 (mg/s)
	mass flux in river at SW-003	M_r3 =	566.4263 (mg/s)
	mass flux in river at SW-004	M_r4 =	857.1494 (mg/s)
	mass flux in river at SW-004A	M_r4A =	2,033.9222 (mg/s)
	mass flux in river at SW-005	M_r5 =	3,852.5130 (mg/s)
mass flux in river at USGS Gage	M_r6 =	4,066.0170 (mg/s)	
mass flux into Colby Lake	M_cl =	5,244.6407 (mg/s)	
Convert mass flux to concentration	Average Flow		
	concentration in river at SW-001	C_r1 =	1.36386 (mg/L)
	concentration in river at SW-002	C_r2 =	1.51807 (mg/L)
	concentration in river at SW-003	C_r3 =	1.53892 (mg/L)
	concentration in river at SW-004	C_r4 =	1.57249 (mg/L)
	concentration in river at SW-004A	C_r4A =	1.62384 (mg/L)
	concentration in river at SW-005	C_r5 =	1.64693 (mg/L)
	concentration in river at USGS Gage	C_r6 =	1.65130 (mg/L)
concentration in Colby Lake	C_cl =	1.65279 (mg/L)	



Partridge River Mass-Balance--Mine Site-Proposed Action

Case	Year 5			
Parameter	Hardness			
Input concentration data	concentration of surface water into SW-001	C s1 =	110.0000 (mg/L)	
	concentration of surface water into SW-002	C s2 =	110.0000 (mg/L)	
	concentration of surface water into SW-003	C s3 =	110.0000 (mg/L)	
	concentration of surface water into SW-004	C s4 =	110.0000 (mg/L)	
	concentration of surface water into SW-004A	C s4A =	110.0000 (mg/L)	
	concentration of surface water into SW-005	C s5 =	110.0000 (mg/L)	
	concentration of surface water into USGS Gage	C s6 =	110.0000 (mg/L)	
	concentration of surface water into Colby Lake	C scl =	110.0000 (mg/L)	
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	110.0000 (mg/L)	
	concentration of surface water discharges from upstream of PM-1	C sns =	110.0000 (mg/L)	
	concentration of West Pit overflow	C sms =	#N/A (mg/L)	
	concentration of ground water into SW-001	C g1 =	66.4200 (mg/L)	
	concentration of ground water into SW-002	C g2 =	66.4200 (mg/L)	
	concentration of ground water into SW-003	C g3 =	66.4200 (mg/L)	
	concentration of ground water into SW-004	C g4 =	66.4200 (mg/L)	
	concentration of ground water into SW-004A	C g4A =	66.4200 (mg/L)	
	concentration of ground water into SW-005	C g5 =	66.4200 (mg/L)	
	concentration of ground water into USGS Gage	C g6 =	66.4200 (mg/L)	
	concentration of ground water into Colby Lake	C gcl =	66.4200 (mg/L)	
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)	
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)	
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	409.6714 (mg/L)	
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	1,729.3495 (mg/L)	
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	1,729.3495 (mg/L)	
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	1,882.3349 (mg/L)	
	concentration of liner leakage from LOSP	C gC4LO =	620.8979 (mg/L)	
	concentration of seepage from Overburden (Storage)	C gOS =	43.5200 (mg/L)	
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	71.5000 (mg/L)	
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	409.6714 (mg/L)	
	concentration of liner leakage from Cat 3 sumps	C gC3s =	1,729.3495 (mg/L)	
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	1,729.3495 (mg/L)	
	concentration of liner leakage from Cat 4 sumps	C gC4s =	1,882.3349 (mg/L)	
	concentration of liner leakage from LOSP sumps	C gC4LOs =	620.8979 (mg/L)	
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	43.5200 (mg/L)	
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	43.5200 (mg/L)	
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	66.4200 (mg/L)	
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	66.4200 (mg/L)	
	concentration of leakage from RTH Pond - PW3	C gRTHp =	66.4200 (mg/L)	
	concentration of liner leakage from WWTF pond	C_gWTFp =	1,565.0000 (mg/L)	
			Average Flow	
	Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	14,072.03511 (mg/s)
		mass flux of ground water into SW-001	M g1 =	338.34348 (mg/s)
		mass flux of surface discharges from upstream of PM-1	M sns =	3,113.00000 (mg/s)
		mass flux of surface water into SW-002	M s2 =	16,418.95184 (mg/s)
		mass flux of ground water into SW-002	M g2 =	633.62374 (mg/s)
mass flux of surface water into SW-003		M s3 =	4,942.37320 (mg/s)	
mass flux of ground water into SW-003		M g3 =	200.01496 (mg/s)	
mass flux of seepage from East Pit to SW-003		M gep_003 =	#N/A (mg/s)	
mass flux of liner leakage from Cat 3 stockpile to SW-003		M gC3_003 =	0.91362 (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-003		M gC3LO_00 =	0.20966 (mg/s)	
mass flux of liner leakage from Cat 3 sumps to SW-003		M gC3s_003 =	0.00091 (mg/s)	
mass flux of surface water into SW-004		M s4 =	18,193.40032 (mg/s)	
mass flux of ground water into SW-004		M g4 =	593.05624 (mg/s)	
mass flux of seepage from East Pit to SW-004		M gep_004 =	#N/A (mg/s)	
mass flux of seepage from West Pit		M gwp =	#N/A (mg/s)	
mass flux of liner leakage from Cat 3 stockpile to SW-004		M gC3_004 =	- (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-004		M gC3LO_00 =	0.20966 (mg/s)	
mass flux of liner leakage from Cat 4 stockpile		M gC4 =	0.26568 (mg/s)	
mass flux of liner leakage from LOSP		M gC4LO =	0.13357 (mg/s)	
mass flux of seepage from Overburden (Storage)		M gOS =	94.18314 (mg/s)	
mass flux of liner leakage from Cat 3LO sumps to SW-004		M gC3LOs_0 =	0.00170 (mg/s)	
mass flux of liner leakage from Cat 4 sumps		M gC4s =	0.00086 (mg/s)	
mass flux of liner leakage from LOSP sumps		M gC4LOs =	0.00057 (mg/s)	
mass flux of seepage from Overburden Ponds - PW1		M gOp1 =	23.28806 (mg/s)	
mass flux of leakage from Haul Road Pond - PW2		M gHRp2 =	0.02527 (mg/s)	
mass flux of leakage from Haul Road Pond - PW4		M gHRp4 =	0.05414 (mg/s)	
mass flux of leakage from RTH Pond - PW3		M gRTHp =	0.00002 (mg/s)	
mass flux of liner leakage from WWTF pond		M gWTFp =	0.03951 (mg/s)	
mass flux of surface water into SW-004A		M s4A =	73,191.21216 (mg/s)	
mass flux of ground water into SW-004A		M g4A =	2,608.14612 (mg/s)	
mass flux of West Pit overflow		M sms =	#N/A (mg/s)	
mass flux of liner leakage from Cat 1/2 stockpile		M gC12 =	- (mg/s)	
mass flux of liner leakage from Cat 1/2 sumps		M gC12s =	0.00898 (mg/s)	
mass flux of seepage from Overburden (Cat 1/2)		M gO12 =	128.67859 (mg/s)	
mass flux of seepage from Overburden Pond - PW7		M gOp7 =	43.75333 (mg/s)	
mass flux of surface water into SW-005		M s5 =	112,467.39218 (mg/s)	
mass flux of ground water into SW-005		M g5 =	4,266.88722 (mg/s)	
mass flux of surface water into USGS Gage		M s6 =	12,077.72128 (mg/s)	
mass flux of ground water into USGS Gage		M g6 =	883.45242 (mg/s)	
mass flux of surface water into Colby Lake		M scl =	73,342.28000 (mg/s)	
mass flux of ground water into Colby Lake		M gcl =	2,199.23262 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP		M shl =	1,214.07000 (mg/s)	
		Average Flow		
Mass balance at each node		mass flux in river at SW-001	M r1 =	17,523.3786 (mg/s)
		mass flux in river at SW-002	M r2 =	34,575.9542 (mg/s)
	mass flux in river at SW-003	M r3 =	39,719.4665 (mg/s)	
	mass flux in river at SW-004	M r4 =	58,624.1252 (mg/s)	
	mass flux in river at SW-004A	M r4A =	134,595.9244 (mg/s)	
	mass flux in river at SW-005	M r5 =	251,330.2038 (mg/s)	
	mass flux in river at USGS Gage	M r6 =	264,291.3775 (mg/s)	
Convert mass flux to concentration	mass flux into Colby Lake	M cl =	341,046.9601 (mg/s)	
	Average Flow			
	concentration in river at SW-001	C r1 =	108.62389 (mg/L)	
	concentration in river at SW-002	C r2 =	108.00785 (mg/L)	
	concentration in river at SW-003	C r3 =	107.91365 (mg/L)	
	concentration in river at SW-004	C r4 =	107.54915 (mg/L)	
	concentration in river at SW-004A	C r4A =	107.45849 (mg/L)	
	concentration in river at SW-005	C r5 =	107.44232 (mg/L)	
	concentration in river at USGS Gage	C r6 =	107.33477 (mg/L)	
	concentration in Colby Lake	C cl =	107.47713 (mg/L)	



Partridge River Mass-Balance--Mine Site-Proposed Action

Case	Year 5			
Parameter	Potassium			
Input concentration data	concentration of surface water into SW-001	C s1 =	1.3000 (mg/L)	
	concentration of surface water into SW-002	C s2 =	1.3000 (mg/L)	
	concentration of surface water into SW-003	C s3 =	1.3000 (mg/L)	
	concentration of surface water into SW-004	C s4 =	1.3000 (mg/L)	
	concentration of surface water into SW-004A	C s4A =	1.3000 (mg/L)	
	concentration of surface water into SW-005	C s5 =	1.3000 (mg/L)	
	concentration of surface water into USGS Gage	C s6 =	1.3000 (mg/L)	
	concentration of surface water into Colby Lake	C scl =	1.3000 (mg/L)	
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	1.3000 (mg/L)	
	concentration of surface water discharges from upstream of PM-1	C sns =	2.7000 (mg/L)	
	concentration of West Pit overflow	C sms =	#N/A (mg/L)	
	concentration of ground water into SW-001	C g1 =	1.7500 (mg/L)	
	concentration of ground water into SW-002	C g2 =	1.7500 (mg/L)	
	concentration of ground water into SW-003	C g3 =	1.7500 (mg/L)	
	concentration of ground water into SW-004	C g4 =	1.7500 (mg/L)	
	concentration of ground water into SW-004A	C g4A =	1.7500 (mg/L)	
	concentration of ground water into SW-005	C g5 =	1.7500 (mg/L)	
	concentration of ground water into USGS Gage	C g6 =	1.7500 (mg/L)	
	concentration of ground water into Colby Lake	C gcl =	1.7500 (mg/L)	
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)	
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)	
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	49.0000 (mg/L)	
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	49.0000 (mg/L)	
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	49.0000 (mg/L)	
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	38.0000 (mg/L)	
	concentration of liner leakage from LOSP	C gC4LO =	38.0000 (mg/L)	
	concentration of seepage from Overburden (Storage)	C gOS =	2.2600 (mg/L)	
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	4.4500 (mg/L)	
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	49.0000 (mg/L)	
	concentration of liner leakage from Cat 3 sumps	C gC3s =	49.0000 (mg/L)	
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	49.0000 (mg/L)	
	concentration of liner leakage from Cat 4 sumps	C gC4s =	38.0000 (mg/L)	
	concentration of liner leakage from LOSP sumps	C gC4LOs =	38.0000 (mg/L)	
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	2.2600 (mg/L)	
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	2.2600 (mg/L)	
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	1.7500 (mg/L)	
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	1.7500 (mg/L)	
	concentration of leakage from RTH Pond - PW3	C gRTHp =	1.7500 (mg/L)	
	concentration of liner leakage from WWTF ponc	C_gWTFp =	40.1000 (mg/L)	
			Average Flow	
	Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	166.30587 (mg/s)
mass flux of ground water into SW-001		M g1 =	8.91450 (mg/s)	
mass flux of surface discharges from upstream of PM-1		M sns =	76.41000 (mg/s)	
mass flux of surface water into SW-002		M s2 =	194.04216 (mg/s)	
mass flux of ground water into SW-002		M g2 =	16.69439 (mg/s)	
mass flux of surface water into SW-003		M s3 =	58.40987 (mg/s)	
mass flux of ground water into SW-003		M g3 =	5.26989 (mg/s)	
mass flux of seepage from East Pit to SW-003		M gep 003 =	#N/A (mg/s)	
mass flux of liner leakage from Cat 3 stockpile to SW-003		M gC3 003 =	0.02589 (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-003		M gC3LO 00 =	0.00594 (mg/s)	
mass flux of liner leakage from Cat 3 sumps to SW-003		M gC3s 003 =	0.00003 (mg/s)	
mass flux of surface water into SW-004		M s4 =	215.01291 (mg/s)	
mass flux of ground water into SW-004		M g4 =	15.62554 (mg/s)	
mass flux of seepage from East Pit to SW-004		M gep 004 =	#N/A (mg/s)	
mass flux of seepage from West Pit		M gwp =	#N/A (mg/s)	
mass flux of liner leakage from Cat 3 stockpile to SW-004		M gC3 004 =	- (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-004		M gC3LO 00 =	0.00594 (mg/s)	
mass flux of liner leakage from Cat 4 stockpile		M gC4 =	0.00536 (mg/s)	
mass flux of liner leakage from LOSP		M gC4LO =	0.00817 (mg/s)	
mass flux of seepage from Overburden (Storage)		M gOS =	4.89094 (mg/s)	
mass flux of liner leakage from Cat 3LO sumps to SW-004		M gC3LOs 0 =	0.00005 (mg/s)	
mass flux of liner leakage from Cat 4 sumps		M gC4s =	0.00002 (mg/s)	
mass flux of liner leakage from LOSP sumps		M gC4LOs =	0.00003 (mg/s)	
mass flux of seepage from Overburden Ponds - PW1		M gOp1 =	1.20935 (mg/s)	
mass flux of leakage from Haul Road Pond - PW2		M gHRp2 =	0.00067 (mg/s)	
mass flux of leakage from Haul Road Pond - PW4		M gHRp4 =	0.00143 (mg/s)	
mass flux of leakage from RTH Pond - PW3		M gRTHp =	0.00000 (mg/s)	
mass flux of liner leakage from WWTF pond		M gWTFp =	0.00101 (mg/s)	
mass flux of surface water into SW-004A		M s4A =	864.98705 (mg/s)	
mass flux of ground water into SW-004A		M g4A =	68.71809 (mg/s)	
mass flux of West Pit overflow		M sms =	#N/A (mg/s)	
mass flux of liner leakage from Cat 1/2 stockpile		M gC12 =	- (mg/s)	
mass flux of liner leakage from Cat 1/2 sumps		M gC12s =	0.00107 (mg/s)	
mass flux of seepage from Overburden (Cat 1/2)		M gO12 =	8.00867 (mg/s)	
mass flux of seepage from Overburden Pond - PW7		M gOp7 =	2.27212 (mg/s)	
mass flux of surface water into SW-005		M s5 =	1,329.16009 (mg/s)	
mass flux of ground water into SW-005		M g5 =	112.42175 (mg/s)	
mass flux of surface water into USGS Gage		M s6 =	142.73671 (mg/s)	
mass flux of ground water into USGS Gage		M g6 =	23.27675 (mg/s)	
mass flux of surface water into Colby Lake		M scl =	866.77240 (mg/s)	
mass flux of ground water into Colby Lake		M gcl =	57.94425 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP		M shl =	14.34810 (mg/s)	
		Average Flow		
Mass balance at each node	mass flux in river at SW-001	M r1 =	251.6304 (mg/s)	
	mass flux in river at SW-002	M r2 =	462.3669 (mg/s)	
	mass flux in river at SW-003	M r3 =	526.0785 (mg/s)	
	mass flux in river at SW-004	M r4 =	762.8400 (mg/s)	
	mass flux in river at SW-004A	M r4A =	1,706.8270 (mg/s)	
	mass flux in river at SW-005	M r5 =	3,148.4068 (mg/s)	
	mass flux in river at USGS Gage	M r6 =	3,314.4223 (mg/s)	
		Average Flow		
Convert mass flux to concentration	concentration in river at SW-001	C r1 =	1.55981 (mg/L)	
	concentration in river at SW-002	C r2 =	1.44433 (mg/L)	
	concentration in river at SW-003	C r3 =	1.42930 (mg/L)	
	concentration in river at SW-004	C r4 =	1.39947 (mg/L)	
	concentration in river at SW-004A	C r4A =	1.36269 (mg/L)	
	concentration in river at SW-005	C r5 =	1.34593 (mg/L)	
	concentration in river at USGS Gage	C r6 =	1.34606 (mg/L)	
		Average Flow		
concentration in Colby Lake		C cl =	1.34044 (mg/L)	

Partridge River Mass-Balance--Mine Site-Proposed Action

Case		Year 5	
Parameter		Magnesium	
Input concentration data	concentration of surface water into SW-001	C_s1 =	8.0000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	8.0000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	8.0000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	8.0000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	8.0000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	8.0000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	8.0000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	8.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	8.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	10.5000 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	8.0200 (mg/L)
	concentration of ground water into SW-002	C_g2 =	8.0200 (mg/L)
	concentration of ground water into SW-003	C_g3 =	8.0200 (mg/L)
	concentration of ground water into SW-004	C_g4 =	8.0200 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	8.0200 (mg/L)
	concentration of ground water into SW-005	C_g5 =	8.0200 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	8.0200 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	8.0200 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	22.9481 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	93.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	93.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	298.0992 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	98.3296 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	4.8800 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	9.0100 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	22.9481 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	93.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	93.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	298.0992 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	98.3296 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	4.8800 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	4.8800 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	8.0200 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	8.0200 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	8.0200 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	141.0000 (mg/L)
		Average Flow	
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	1,023.42074 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	40.85388 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	297.15000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	1,194.10559 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	76.50802 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	359.44532 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	24.15116 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.04913 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.01128 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00005 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	1,323.15639 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	71.60962 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.01128 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.04207 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.02115 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	10.56098 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00009 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00014 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00009 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	2.61135 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00305 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00654 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00356 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	5,322.99725 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	314.92520 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00050 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	16.21530 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	4.90616 (mg/s)
	mass flux of surface water into SW-005	M_s5 =	8,179.44670 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	515.21282 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	878.37973 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	106.67402 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	5,333.98400 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	265.55022 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	88.29600 (mg/s)
		Average Flow	
Mass balance at each node	mass flux in river at SW-001	M_r1 =	1,361.4248 (mg/s)
	mass flux in river at SW-002	M_r2 =	2,632.0382 (mg/s)
	mass flux in river at SW-003	M_r3 =	3,015.6952 (mg/s)
	mass flux in river at SW-004	M_r4 =	4,423.7215 (mg/s)
	mass flux in river at SW-004A	M_r4A =	10,082.7659 (mg/s)
	mass flux in river at SW-005	M_r5 =	18,777.4254 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	19,762.4791 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	25,450.3094 (mg/s)
			Average Flow
	concentration in river at SW-001	C_r1 =	8.43920 (mg/L)
	concentration in river at SW-002	C_r2 =	8.22192 (mg/L)
	concentration in river at SW-003	C_r3 =	8.19333 (mg/L)
	concentration in river at SW-004	C_r4 =	8.11556 (mg/L)
	concentration in river at SW-004A	C_r4A =	8.04986 (mg/L)
	concentration in river at SW-005	C_r5 =	8.02725 (mg/L)
	concentration in river at USGS Gage	C_r6 =	8.02599 (mg/L)
	concentration in Colby Lake	C_cl =	8.02038 (mg/L)

Partridge River Mass-Balance--Mine Site-Proposed Action

Case		Year 5	
Parameter		Manganese	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.1500 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.1500 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.1500 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.1500 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.1500 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.1500 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.1500 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.1500 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.1500 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0086 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.1240 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.1240 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.1240 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.1240 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.1240 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.1240 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.1240 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.1240 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.1722 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.7500 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.7500 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	20.9242 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	6.9019 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.1604 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.1160 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.1722 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.7500 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.7500 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	20.9242 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	6.9019 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.1604 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	0.1604 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.1240 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.1240 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.1240 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	6.2200 (mg/L)
		Average Flow	
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	19.18914 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.63166 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.24338 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	22.38948 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	1.18292 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	6.73960 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.37341 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00040 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00009 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	24.80918 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	1.10718 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00009 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00295 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00148 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.34711 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00001 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00001 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.08583 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00005 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00010 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00016 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	99.80620 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	4.86917 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.20877 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	0.16125 (mg/s)
	mass flux of surface water into SW-005	M_s5 =	153.36463 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	7.96588 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	16.46962 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	1.64932 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	100.01220 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	4.10576 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	1.65555 (mg/s)
		Average Flow	
Mass balance at each node	mass flux in river at SW-001	M_r1 =	20.0642 (mg/s)
	mass flux in river at SW-002	M_r2 =	43.6366 (mg/s)
	mass flux in river at SW-003	M_r3 =	50.7501 (mg/s)
	mass flux in river at SW-004	M_r4 =	77.1042 (mg/s)
	mass flux in river at SW-004A	M_r4A =	152.1496 (mg/s)
	mass flux in river at SW-005	M_r5 =	343.4801 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	361.5951 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	467.3726 (mg/s)
			Average Flow
	concentration in river at SW-001	C_r1 =	0.12437 (mg/L)
	concentration in river at SW-002	C_r2 =	0.13631 (mg/L)
	concentration in river at SW-003	C_r3 =	0.13788 (mg/L)
	concentration in river at SW-004	C_r4 =	0.14145 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.14542 (mg/L)
	concentration in river at SW-005	C_r5 =	0.14684 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.14685 (mg/L)
	concentration in Colby Lake	C_cl =	0.14729 (mg/L)

Partridge River Mass-Balance--Mine Site-Proposed Action

Case	Year 5		
Parameter	Sodium		
Input concentration data	concentration of surface water into SW-001	C s1 =	2.5000 (mg/L)
	concentration of surface water into SW-002	C s2 =	2.5000 (mg/L)
	concentration of surface water into SW-003	C s3 =	2.5000 (mg/L)
	concentration of surface water into SW-004	C s4 =	2.5000 (mg/L)
	concentration of surface water into SW-004A	C s4A =	2.5000 (mg/L)
	concentration of surface water into SW-005	C s5 =	2.5000 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	2.5000 (mg/L)
	concentration of surface water into Colby Lake	C scl =	2.5000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	2.5000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	4.8000 (mg/L)
	concentration of West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	13.3300 (mg/L)
	concentration of ground water into SW-002	C g2 =	13.3300 (mg/L)
	concentration of ground water into SW-003	C g3 =	13.3300 (mg/L)
	concentration of ground water into SW-004	C g4 =	13.3300 (mg/L)
	concentration of ground water into SW-004A	C g4A =	13.3300 (mg/L)
	concentration of ground water into SW-005	C g5 =	13.3300 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	13.3300 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	13.3300 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	128.6473 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	400.7879 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	543.2659 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	112.6403 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	37.1550 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	4.6000 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	7.1900 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	128.6473 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C gC3s =	400.7879 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	543.2659 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	112.6403 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	37.1550 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	4.6000 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	4.6000 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	13.3300 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	13.3300 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	13.3300 (mg/L)
	concentration of liner leakage from WWTF pond	C gWTFp =	358.0000 (mg/L)
Convert concentration to mass flux	Average Flow		
	mass flux of surface water into SW-001	M s1 =	319.81898 (mg/s)
	mass flux of ground water into SW-001	M g1 =	67.90302 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	135.84000 (mg/s)
	mass flux of surface water into SW-002	M s2 =	373.15800 (mg/s)
	mass flux of ground water into SW-002	M g2 =	127.16357 (mg/s)
	mass flux of surface water into SW-003	M s3 =	112.32666 (mg/s)
	mass flux of ground water into SW-003	M g3 =	40.14151 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M gC3_003 =	0.21174 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_00 =	0.06587 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M gC3s_003 =	0.00021 (mg/s)
	mass flux of surface water into SW-004	M s4 =	413.48637 (mg/s)
	mass flux of ground water into SW-004	M g4 =	119.02198 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_00 =	0.06587 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.01590 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00799 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	9.95502 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_0 =	0.00053 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00005 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00003 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	2.46151 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00507 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.01087 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00904 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	1,663.43664 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	523.43553 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M gC12s =	0.00282 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M gO12 =	12.93985 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	4.62466 (mg/s)
	mass flux of surface water into SW-005	M s5 =	2,556.07710 (mg/s)
	mass flux of ground water into SW-005	M g5 =	856.33253 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	274.49367 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	177.30233 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	1,666.87000 (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	441.36963 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl =	27.59250 (mg/s)
Mass balance at each node	Average Flow		
	mass flux in river at SW-001	M r1 =	523.5620 (mg/s)
	mass flux in river at SW-002	M r2 =	1,023.8836 (mg/s)
	mass flux in river at SW-003	M r3 =	1,176.6296 (mg/s)
	mass flux in river at SW-004	M r4 =	1,721.6698 (mg/s)
	mass flux in river at SW-004A	M r4A =	3,926.1093 (mg/s)
	mass flux in river at SW-005	M r5 =	7,338.5189 (mg/s)
mass flux in river at USGS Gage	M r6 =	7,790.3149 (mg/s)	
mass flux into Colby Lake	M cl =	9,926.1470 (mg/s)	
Convert mass flux to concentration	Average Flow		
	concentration in river at SW-001	C r1 =	3.24546 (mg/L)
	concentration in river at SW-002	C r2 =	3.19839 (mg/L)
	concentration in river at SW-003	C r3 =	3.19678 (mg/L)
	concentration in river at SW-004	C r4 =	3.15850 (mg/L)
	concentration in river at SW-004A	C r4A =	3.13452 (mg/L)
	concentration in river at SW-005	C r5 =	3.13718 (mg/L)
	concentration in river at USGS Gage	C r6 =	3.16383 (mg/L)
concentration in Colby Lake	C cl =	3.12811 (mg/L)	

Partridge River Mass-Balance--Mine Site-Proposed Action

Case Parameter	Year 5 Nickel			
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0016 (mg/L)	
	concentration of surface water into SW-002	C s2 =	0.0016 (mg/L)	
	concentration of surface water into SW-003	C s3 =	0.0016 (mg/L)	
	concentration of surface water into SW-004	C s4 =	0.0016 (mg/L)	
	concentration of surface water into SW-004A	C s4A =	0.0016 (mg/L)	
	concentration of surface water into SW-005	C s5 =	0.0016 (mg/L)	
	concentration of surface water into USGS Gage	C s6 =	0.0016 (mg/L)	
	concentration of surface water into Colby Lake	C scl =	0.0016 (mg/L)	
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0033 (mg/L)	
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0016 (mg/L)	
	concentration of West Pit overflow	C sms =	#N/A (mg/L)	
	concentration of ground water into SW-001	C g1 =	0.0163 (mg/L)	
	concentration of ground water into SW-002	C g2 =	0.0163 (mg/L)	
	concentration of ground water into SW-003	C g3 =	0.0163 (mg/L)	
	concentration of ground water into SW-004	C g4 =	0.0163 (mg/L)	
	concentration of ground water into SW-004A	C g4A =	0.0163 (mg/L)	
	concentration of ground water into SW-005	C g5 =	0.0163 (mg/L)	
	concentration of ground water into USGS Gage	C g6 =	0.0163 (mg/L)	
	concentration of ground water into Colby Lake	C gcl =	0.0163 (mg/L)	
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)	
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)	
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	0.0511 (mg/L)	
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	0.8600 (mg/L)	
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.8600 (mg/L)	
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	113.0883 (mg/L)	
	concentration of liner leakage from LOSP	C gC4LO =	37.3028 (mg/L)	
	concentration of seepage from Overburden (Storage)	C gOS =	0.0080 (mg/L)	
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	0.0190 (mg/L)	
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	0.0511 (mg/L)	
	concentration of liner leakage from Cat 3 sumps	C gC3s =	0.8600 (mg/L)	
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.8600 (mg/L)	
	concentration of liner leakage from Cat 4 sumps	C gC4s =	113.0883 (mg/L)	
	concentration of liner leakage from LOSP sumps	C gC4LOs =	37.3028 (mg/L)	
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0080 (mg/L)	
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	0.0080 (mg/L)	
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0163 (mg/L)	
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0163 (mg/L)	
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0163 (mg/L)	
	concentration of liner leakage from WWTF ponc	C_gWTFp =	26.4000 (mg/L)	
			Average Flow	
	Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	0.19957 (mg/s)
		mass flux of ground water into SW-001	M g1 =	0.08293 (mg/s)
		mass flux of surface discharges from upstream of PM-1	M sns =	0.04387 (mg/s)
mass flux of surface water into SW-002		M s2 =	0.23285 (mg/s)	
mass flux of ground water into SW-002		M g2 =	0.15531 (mg/s)	
mass flux of surface water into SW-003		M s3 =	0.07009 (mg/s)	
mass flux of ground water into SW-003		M g3 =	0.04903 (mg/s)	
mass flux of seepage from East Pit to SW-003		M gep 003 =	#N/A (mg/s)	
mass flux of liner leakage from Cat 3 stockpile to SW-003		M gC3 003 =	0.00045 (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-003		M gC3LO 00 =	0.00010 (mg/s)	
mass flux of liner leakage from Cat 3 sumps to SW-003		M gC3s 003 =	0.00000 (mg/s)	
mass flux of surface water into SW-004		M s4 =	0.25802 (mg/s)	
mass flux of ground water into SW-004		M g4 =	0.14536 (mg/s)	
mass flux of seepage from East Pit to SW-004		M gep 004 =	#N/A (mg/s)	
mass flux of seepage from West Pit		M gwp =	#N/A (mg/s)	
mass flux of liner leakage from Cat 3 stockpile to SW-004		M gC3 004 =	- (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-004		M gC3LO 00 =	0.00010 (mg/s)	
mass flux of liner leakage from Cat 4 stockpile		M gC4 =	0.01596 (mg/s)	
mass flux of liner leakage from LOSP		M gC4LO =	0.00802 (mg/s)	
mass flux of seepage from Overburden (Storage)		M gOS =	0.01725 (mg/s)	
mass flux of liner leakage from Cat 3LO sumps to SW-004		M gC3LOs 0 =	0.00000 (mg/s)	
mass flux of liner leakage from Cat 4 sumps		M gC4s =	0.00005 (mg/s)	
mass flux of liner leakage from LOSP sumps		M gC4LOs =	0.00003 (mg/s)	
mass flux of seepage from Overburden Ponds - PW1		M gOp1 =	0.00426 (mg/s)	
mass flux of leakage from Haul Road Pond - PW2		M gHRp2 =	0.00001 (mg/s)	
mass flux of leakage from Haul Road Pond - PW4		M gHRp4 =	0.00001 (mg/s)	
mass flux of leakage from RTH Pond - PW3		M gRTHp =	0.00000 (mg/s)	
mass flux of liner leakage from WWTF pond		M gWTFp =	0.00067 (mg/s)	
mass flux of surface water into SW-004A		M s4A =	1.03798 (mg/s)	
mass flux of ground water into SW-004A		M g4A =	0.63927 (mg/s)	
mass flux of West Pit overflow		M sms =	#N/A (mg/s)	
mass flux of liner leakage from Cat 1/2 stockpile		M gC12 =	- (mg/s)	
mass flux of liner leakage from Cat 1/2 sumps		M gC12s =	0.00000 (mg/s)	
mass flux of seepage from Overburden (Cat 1/2)		M gO12 =	0.03419 (mg/s)	
mass flux of seepage from Overburden Pond - PW7		M gOp7 =	0.00801 (mg/s)	
mass flux of surface water into SW-005		M s5 =	1.59499 (mg/s)	
mass flux of ground water into SW-005		M g5 =	1.04584 (mg/s)	
mass flux of surface water into USGS Gage		M s6 =	0.17128 (mg/s)	
mass flux of ground water into USGS Gage		M g6 =	0.21654 (mg/s)	
mass flux of surface water into Colby Lake		M scl =	1.04013 (mg/s)	
mass flux of ground water into Colby Lake		M gcl =	0.53905 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP		M shl =	0.03642 (mg/s)	
		Average Flow		
Mass balance at each node	mass flux in river at SW-001	M r1 =	0.3264 (mg/s)	
	mass flux in river at SW-002	M r2 =	0.7145 (mg/s)	
	mass flux in river at SW-003	M r3 =	0.8342 (mg/s)	
	mass flux in river at SW-004	M r4 =	1.2839 (mg/s)	
	mass flux in river at SW-004A	M r4A =	3.0034 (mg/s)	
	mass flux in river at SW-005	M r5 =	5.6443 (mg/s)	
	mass flux in river at USGS Gage	M r6 =	6.0321 (mg/s)	
mass flux into Colby Lake	M cl =	7.6477 (mg/s)		
		Average Flow		
Convert mass flux to concentration	concentration in river at SW-001	C r1 =	0.00202 (mg/L)	
	concentration in river at SW-002	C r2 =	0.00223 (mg/L)	
	concentration in river at SW-003	C r3 =	0.00227 (mg/L)	
	concentration in river at SW-004	C r4 =	0.00236 (mg/L)	
	concentration in river at SW-004A	C r4A =	0.00240 (mg/L)	
	concentration in river at SW-005	C r5 =	0.00241 (mg/L)	
	concentration in river at USGS Gage	C r6 =	0.00245 (mg/L)	
	concentration in Colby Lake	C cl =	0.00241 (mg/L)	



Partridge River Mass-Balance--Mine Site-Proposed Action

Case Parameter	Year 5 Lead		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0005 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0005 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0005 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0005 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0005 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0005 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0005 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0005 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0005 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0002 (mg/L)
	concentration of West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0011 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0011 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0011 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0011 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0011 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0011 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0011 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0011 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	0.0061 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	0.0180 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0244 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0528 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.0472 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0007 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	0.0061 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C gC3s =	0.0180 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.0244 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0528 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0472 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0007 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	0.0007 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0011 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0011 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0011 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	0.0380 (mg/L)
Convert concentration to mass flux	Average Flow		
	mass flux of surface water into SW-001	M s1 =	0.06396 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.00571 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.00425 (mg/s)
	mass flux of surface water into SW-002	M s2 =	0.07463 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.01068 (mg/s)
	mass flux of surface water into SW-003	M s3 =	0.02247 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.00337 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep 003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M gC3 003 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO 00 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M gC3s 003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	0.08270 (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.01000 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep 004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M gC3 004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO 00 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00001 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.00146 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs 0 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.00036 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00000 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	0.33269 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.04398 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	0.00068 (mg/s)
	mass flux of surface water into SW-005	M s5 =	0.51122 (mg/s)
	mass flux of ground water into SW-005	M g5 =	0.07195 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	0.05490 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.01490 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	0.33337 (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	0.03708 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.00552 (mg/s)
Mass balance at each node	Average Flow		
	mass flux in river at SW-001	M r1 =	0.0739 (mg/s)
	mass flux in river at SW-002	M r2 =	0.1592 (mg/s)
	mass flux in river at SW-003	M r3 =	0.1851 (mg/s)
	mass flux in river at SW-004	M r4 =	0.2796 (mg/s)
	mass flux in river at SW-004A	M r4A =	0.6570 (mg/s)
	mass flux in river at SW-005	M r5 =	1.2401 (mg/s)
	mass flux in river at USGS Gage	M r6 =	1.3099 (mg/s)
mass flux into Colby Lake	M cl =	1.6859 (mg/s)	
Convert mass flux to concentration	Average Flow		
	concentration in river at SW-001	C r1 =	0.00046 (mg/L)
	concentration in river at SW-002	C r2 =	0.00050 (mg/L)
	concentration in river at SW-003	C r3 =	0.00050 (mg/L)
	concentration in river at SW-004	C r4 =	0.00051 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00052 (mg/L)
	concentration in river at SW-005	C r5 =	0.00053 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00053 (mg/L)
	concentration in Colby Lake	C cl =	0.00053 (mg/L)



Partridge River Mass-Balance--Mine Site-Proposed Action

Case		Year 5	
Parameter		Antimony	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0015 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0015 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0015 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0015 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0015 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0015 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0015 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0015 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0015 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0015 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0015 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0015 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0015 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0015 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0015 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0015 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0015 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0015 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0800 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.0800 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0800 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0474 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0156 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0003 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0004 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0800 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.0800 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0800 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0474 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0156 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0003 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	0.0003 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0015 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0015 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0015 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0765 (mg/L)
		Average Flow	
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	0.19189 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00764 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.04245 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	0.22389 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.01431 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.06740 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00452 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00004 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.24809 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.01339 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00001 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00065 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00016 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00000 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	0.99806 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.05890 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.00072 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	0.00030 (mg/s)
	mass flux of surface water into SW-005	M_s5 =	1.53365 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.09636 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.16470 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.01995 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	1.00012 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.04967 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.01656 (mg/s)
		Average Flow	
Mass balance at each node	mass flux in river at SW-001	M_r1 =	0.2420 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.4802 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.5622 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.8145 (mg/s)
	mass flux in river at SW-004A	M_r4A =	1.8725 (mg/s)
	mass flux in river at SW-005	M_r5 =	3.5025 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	3.6871 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	4.7535 (mg/s)
			Average Flow
	concentration in river at SW-001	C_r1 =	0.00150 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00150 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00150 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00149 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00149 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00150 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00150 (mg/L)
	concentration in Colby Lake	C_cl =	0.00150 (mg/L)

Partridge River Mass-Balance--Mine Site-Proposed Action

Case		Year 5	
Parameter		Selenium	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0005 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0005 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0005 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0005 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0005 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0005 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0005 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0005 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0005 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0005 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0019 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0019 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0019 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0019 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0019 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0019 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0019 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0019 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0029 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.0029 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0029 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0029 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0029 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0004 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0019 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0029 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.0029 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0029 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0029 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0029 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0004 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	0.0004 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0019 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0019 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0019 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0100 (mg/L)
Convert concentration to mass flux	Average Flow		
	mass flux of surface water into SW-001	M_s1 =	0.06396 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00973 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.01415 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	0.07463 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.01822 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.02247 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00575 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.08270 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.01705 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00096 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00024 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00000 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	0.33269 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.07500 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.00342 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	0.00045 (mg/s)
	mass flux of surface water into SW-005	M_s5 =	0.51122 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.12270 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.05490 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.02540 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	0.33337 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.06324 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00552 (mg/s)
Mass balance at each node	Average Flow		
	mass flux in river at SW-001	M_r1 =	0.0878 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.1807 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.2089 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.3099 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.7214 (mg/s)
	mass flux in river at SW-005	M_r5 =	1.3553 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	1.4356 (mg/s)
Convert mass flux to concentration	Average Flow		
	concentration in river at SW-001	C_r1 =	0.00054 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00056 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00057 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00057 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00058 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00058 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00058 (mg/L)
	concentration in Colby Lake	C_cl =	0.00058 (mg/L)

Partridge River Mass-Balance--Mine Site-Proposed Action

Case	Year 5		
Parameter	Sulfate		
Input concentration data	concentration of surface water into SW-001	C s1 =	9.0000 (mg/L)
	concentration of surface water into SW-002	C s2 =	9.0000 (mg/L)
	concentration of surface water into SW-003	C s3 =	9.0000 (mg/L)
	concentration of surface water into SW-004	C s4 =	9.0000 (mg/L)
	concentration of surface water into SW-004A	C s4A =	9.0000 (mg/L)
	concentration of surface water into SW-005	C s5 =	9.0000 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	9.0000 (mg/L)
	concentration of surface water into Colby Lake	C scl =	9.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	22.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	22.0000 (mg/L)
	concentration of West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	16.1300 (mg/L)
	concentration of ground water into SW-002	C g2 =	16.1300 (mg/L)
	concentration of ground water into SW-003	C g3 =	16.1300 (mg/L)
	concentration of ground water into SW-004	C g4 =	16.1300 (mg/L)
	concentration of ground water into SW-004A	C g4A =	16.1300 (mg/L)
	concentration of ground water into SW-005	C g5 =	16.1300 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	16.1300 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	16.1300 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	284.3989 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	2,340.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	2,340.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	9,600.0000 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	3,900.7932 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	35.1700 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	68.3000 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	284.3989 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C gC3s =	2,340.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	2,340.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	9,600.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	3,900.7932 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	35.1700 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	35.1700 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	16.1300 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	16.1300 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	16.1300 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	2,914.0000 (mg/L)
		Average Flow	
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	1,151.34833 (mg/s)
	mass flux of ground water into SW-001	M g1 =	82.16622 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	622.60000 (mg/s)
	mass flux of surface water into SW-002	M s2 =	1,343.36879 (mg/s)
	mass flux of ground water into SW-002	M g2 =	153.87460 (mg/s)
	mass flux of surface water into SW-003	M s3 =	404.37599 (mg/s)
	mass flux of ground water into SW-003	M g3 =	48.57334 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep 003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M gC3_003 =	1.23623 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_00 =	0.28370 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M gC3s_003 =	0.00123 (mg/s)
	mass flux of surface water into SW-004	M s4 =	1,488.55094 (mg/s)
	mass flux of ground water into SW-004	M g4 =	144.02284 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep 004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_00 =	0.28370 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	1.35498 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.83917 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	76.11262 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_0 =	0.00230 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00438 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00356 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	18.81988 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00614 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.01315 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.07356 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	5,988.37190 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	633.38448 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M gC12s =	0.00623 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M gO12 =	122.91955 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	35.35856 (mg/s)
	mass flux of surface water into SW-005	M s5 =	9,201.87754 (mg/s)
	mass flux of ground water into SW-005	M g5 =	1,036.20733 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	988.17720 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	214.54513 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	6,000.73200 (mg/s)
mass flux of ground water into Colby Lake	M gcl =	534.08043 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	99.33300 (mg/s)	
Mass balance at each node	Average Flow		
	mass flux in river at SW-001	M r1 =	1,856.1145 (mg/s)
	mass flux in river at SW-002	M r2 =	3,353.3579 (mg/s)
	mass flux in river at SW-003	M r3 =	3,807.8284 (mg/s)
	mass flux in river at SW-004	M r4 =	5,537.9156 (mg/s)
	mass flux in river at SW-004A	M r4A =	12,317.9563 (mg/s)
	mass flux in river at SW-005	M r5 =	22,556.0412 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M r6 =	23,758.7635 (mg/s)
	mass flux into Colby Lake	M cl =	30,392.9090 (mg/s)
Convert mass flux to concentration	Average Flow		
	concentration in river at SW-001	C r1 =	11.50568 (mg/L)
	concentration in river at SW-002	C r2 =	10.47517 (mg/L)
	concentration in river at SW-003	C r3 =	10.34547 (mg/L)
	concentration in river at SW-004	C r4 =	10.15961 (mg/L)
	concentration in river at SW-004A	C r4A =	9.83439 (mg/L)
	concentration in river at SW-005	C r5 =	9.64259 (mg/L)
	concentration in river at USGS Gage	C r6 =	9.64898 (mg/L)
concentration in Colby Lake	C cl =	9.57798 (mg/L)	

Partridge River Mass-Balance--Mine Site-Proposed Action

Case	Year 5			
Parameter	Thallium			
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0004 (mg/L)	
	concentration of surface water into SW-002	C_s2 =	0.0004 (mg/L)	
	concentration of surface water into SW-003	C_s3 =	0.0004 (mg/L)	
	concentration of surface water into SW-004	C_s4 =	0.0004 (mg/L)	
	concentration of surface water into SW-004A	C_s4A =	0.0004 (mg/L)	
	concentration of surface water into SW-005	C_s5 =	0.0004 (mg/L)	
	concentration of surface water into USGS Gage	C_s6 =	0.0004 (mg/L)	
	concentration of surface water into Colby Lake	C_scl =	0.0004 (mg/L)	
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0004 (mg/L)	
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0003 (mg/L)	
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)	
	concentration of ground water into SW-001	C_g1 =	0.0000 (mg/L)	
	concentration of ground water into SW-002	C_g2 =	0.0000 (mg/L)	
	concentration of ground water into SW-003	C_g3 =	0.0000 (mg/L)	
	concentration of ground water into SW-004	C_g4 =	0.0000 (mg/L)	
	concentration of ground water into SW-004A	C_g4A =	0.0000 (mg/L)	
	concentration of ground water into SW-005	C_g5 =	0.0000 (mg/L)	
	concentration of ground water into USGS Gage	C_g6 =	0.0000 (mg/L)	
	concentration of ground water into Colby Lake	C_gcl =	0.0000 (mg/L)	
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)	
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)	
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0000 (mg/L)	
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.0000 (mg/L)	
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0000 (mg/L)	
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0001 (mg/L)	
	concentration of liner leakage from LOSP	C_gC4LO =	0.0001 (mg/L)	
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0000 (mg/L)	
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	- (mg/L)	
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0000 (mg/L)	
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.0000 (mg/L)	
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0000 (mg/L)	
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0001 (mg/L)	
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0001 (mg/L)	
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0000 (mg/L)	
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	0.0000 (mg/L)	
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0000 (mg/L)	
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0000 (mg/L)	
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0000 (mg/L)	
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0072 (mg/L)	
			Average Flow	
	Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	0.05117 (mg/s)
mass flux of ground water into SW-001		M_g1 =	0.00002 (mg/s)	
mass flux of surface discharges from upstream of PM-1		M_sns =	0.00809 (mg/s)	
mass flux of surface water into SW-002		M_s2 =	0.05971 (mg/s)	
mass flux of ground water into SW-002		M_g2 =	0.00004 (mg/s)	
mass flux of surface water into SW-003		M_s3 =	0.01797 (mg/s)	
mass flux of ground water into SW-003		M_g3 =	0.00001 (mg/s)	
mass flux of seepage from East Pit to SW-003		M_gep_003 =	#N/A (mg/s)	
mass flux of liner leakage from Cat 3 stockpile to SW-003		M_gC3_003 =	0.00000 (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-003		M_gC3LO_00 =	0.00000 (mg/s)	
mass flux of liner leakage from Cat 3 sumps to SW-003		M_gC3s_003 =	0.00000 (mg/s)	
mass flux of surface water into SW-004		M_s4 =	0.06616 (mg/s)	
mass flux of ground water into SW-004		M_g4 =	0.00004 (mg/s)	
mass flux of seepage from East Pit to SW-004		M_gep_004 =	#N/A (mg/s)	
mass flux of seepage from West Pit		M_gwp =	#N/A (mg/s)	
mass flux of liner leakage from Cat 3 stockpile to SW-004		M_gC3_004 =	- (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-004		M_gC3LO_00 =	0.00000 (mg/s)	
mass flux of liner leakage from Cat 4 stockpile		M_gC4 =	0.00000 (mg/s)	
mass flux of liner leakage from LOSP		M_gC4LO =	0.00000 (mg/s)	
mass flux of seepage from Overburden (Storage)		M_gOS =	0.00009 (mg/s)	
mass flux of liner leakage from Cat 3LO sumps to SW-004		M_gC3LOs_0 =	0.00000 (mg/s)	
mass flux of liner leakage from Cat 4 sumps		M_gC4s =	0.00000 (mg/s)	
mass flux of liner leakage from LOSP sumps		M_gC4LOs =	0.00000 (mg/s)	
mass flux of seepage from Overburden Ponds - PW1		M_gOp1 =	0.00002 (mg/s)	
mass flux of leakage from Haul Road Pond - PW2		M_gHRp2 =	0.00000 (mg/s)	
mass flux of leakage from Haul Road Pond - PW4		M_gHRp4 =	0.00000 (mg/s)	
mass flux of leakage from RTH Pond - PW3		M_gRTHp =	0.00000 (mg/s)	
mass flux of liner leakage from WWTF pond		M_gWTFp =	0.00000 (mg/s)	
mass flux of surface water into SW-004A		M_s4A =	0.26615 (mg/s)	
mass flux of ground water into SW-004A		M_g4A =	0.00016 (mg/s)	
mass flux of West Pit overflow		M_sms =	#N/A (mg/s)	
mass flux of liner leakage from Cat 1/2 stockpile		M_gC12 =	- (mg/s)	
mass flux of liner leakage from Cat 1/2 sumps		M_gC12s =	0.00000 (mg/s)	
mass flux of seepage from Overburden (Cat 1/2)		M_gO12 =	- (mg/s)	
mass flux of seepage from Overburden Pond - PW7		M_gOp7 =	0.00004 (mg/s)	
mass flux of surface water into SW-005		M_s5 =	0.40897 (mg/s)	
mass flux of ground water into SW-005		M_g5 =	0.00026 (mg/s)	
mass flux of surface water into USGS Gage		M_s6 =	0.04392 (mg/s)	
mass flux of ground water into USGS Gage		M_g6 =	0.00005 (mg/s)	
mass flux of surface water into Colby Lake		M_scl =	0.26670 (mg/s)	
mass flux of ground water into Colby Lake		M_gcl =	0.00013 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP		M_shl =	0.00441 (mg/s)	
		Average Flow		
Mass balance at each node	mass flux in river at SW-001	M_r1 =	0.0593 (mg/s)	
	mass flux in river at SW-002	M_r2 =	0.1190 (mg/s)	
	mass flux in river at SW-003	M_r3 =	0.1370 (mg/s)	
	mass flux in river at SW-004	M_r4 =	0.2033 (mg/s)	
	mass flux in river at SW-004A	M_r4A =	0.4697 (mg/s)	
	mass flux in river at SW-005	M_r5 =	0.8789 (mg/s)	
	mass flux in river at USGS Gage	M_r6 =	0.9229 (mg/s)	
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	1.1941 (mg/s)	
		Average Flow		
Convert mass flux to concentration	concentration in river at SW-001	C_r1 =	0.00037 (mg/L)	
	concentration in river at SW-002	C_r2 =	0.00037 (mg/L)	
	concentration in river at SW-003	C_r3 =	0.00037 (mg/L)	
	concentration in river at SW-004	C_r4 =	0.00037 (mg/L)	
	concentration in river at SW-004A	C_r4A =	0.00037 (mg/L)	
	concentration in river at SW-005	C_r5 =	0.00038 (mg/L)	
	concentration in river at USGS Gage	C_r6 =	0.00037 (mg/L)	
	concentration in Colby Lake	C_cl =	0.00038 (mg/L)	

Partridge River Mass-Balance--Mine Site-Proposed Action

Case	Year 5			
Parameter	Vanadium			
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0009 (mg/L)	
	concentration of surface water into SW-002	C_s2 =	0.0009 (mg/L)	
	concentration of surface water into SW-003	C_s3 =	0.0009 (mg/L)	
	concentration of surface water into SW-004	C_s4 =	0.0009 (mg/L)	
	concentration of surface water into SW-004A	C_s4A =	0.0009 (mg/L)	
	concentration of surface water into SW-005	C_s5 =	0.0009 (mg/L)	
	concentration of surface water into USGS Gage	C_s6 =	0.0009 (mg/L)	
	concentration of surface water into Colby Lake	C_scl =	0.0009 (mg/L)	
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0009 (mg/L)	
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0043 (mg/L)	
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)	
	concentration of ground water into SW-001	C_g1 =	0.0043 (mg/L)	
	concentration of ground water into SW-002	C_g2 =	0.0043 (mg/L)	
	concentration of ground water into SW-003	C_g3 =	0.0043 (mg/L)	
	concentration of ground water into SW-004	C_g4 =	0.0043 (mg/L)	
	concentration of ground water into SW-004A	C_g4A =	0.0043 (mg/L)	
	concentration of ground water into SW-005	C_g5 =	0.0043 (mg/L)	
	concentration of ground water into USGS Gage	C_g6 =	0.0043 (mg/L)	
	concentration of ground water into Colby Lake	C_gcl =	0.0043 (mg/L)	
	concentration of ground water seepage from East Pit	C_ggp =	#N/A (mg/L)	
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)	
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.1884 (mg/L)	
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.2558 (mg/L)	
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.3467 (mg/L)	
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0230 (mg/L)	
	concentration of liner leakage from LOSP	C_gC4LO =	0.0076 (mg/L)	
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0017 (mg/L)	
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0014 (mg/L)	
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.1884 (mg/L)	
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.2558 (mg/L)	
	concentration of liner leakage from Cat 3LO sumps	C_g3LOs =	0.3467 (mg/L)	
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0230 (mg/L)	
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0076 (mg/L)	
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0017 (mg/L)	
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	0.0017 (mg/L)	
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0043 (mg/L)	
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0043 (mg/L)	
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0043 (mg/L)	
	concentration of liner leakage from WWTF ponc	C_gWTFp =	0.4915 (mg/L)	
			Average Flow	
	Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	0.11513 (mg/s)
		mass flux of ground water into SW-001	M_g1 =	0.02190 (mg/s)
		mass flux of surface discharges from upstream of PM-1	M_sns =	0.12169 (mg/s)
mass flux of surface water into SW-002		M_s2 =	0.13434 (mg/s)	
mass flux of ground water into SW-002		M_g2 =	0.04102 (mg/s)	
mass flux of surface water into SW-003		M_s3 =	0.04044 (mg/s)	
mass flux of ground water into SW-003		M_g3 =	0.01295 (mg/s)	
mass flux of seepage from East Pit to SW-003		M_ggp_003 =	#N/A (mg/s)	
mass flux of liner leakage from Cat 3 stockpile to SW-003		M_gC3_003 =	0.00014 (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-003		M_gC3LO_00	0.00004 (mg/s)	
mass flux of liner leakage from Cat 3 sumps to SW-003		M_gC3s_003	0.00000 (mg/s)	
mass flux of surface water into SW-004		M_s4 =	0.14886 (mg/s)	
mass flux of ground water into SW-004		M_g4 =	0.03839 (mg/s)	
mass flux of seepage from East Pit to SW-004		M_ggp_004 =	#N/A (mg/s)	
mass flux of seepage from West Pit		M_gwp =	#N/A (mg/s)	
mass flux of liner leakage from Cat 3 stockpile to SW-004		M_gC3_004 =	- (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-004		M_gC3LO_00	0.00004 (mg/s)	
mass flux of liner leakage from Cat 4 stockpile		M_gC4 =	0.00000 (mg/s)	
mass flux of liner leakage from LOSP		M_gC4LO =	0.00000 (mg/s)	
mass flux of seepage from Overburden (Storage)		M_gOS =	0.00374 (mg/s)	
mass flux of liner leakage from Cat 3LO sumps to SW-004		M_gC3LOs_0	0.00000 (mg/s)	
mass flux of liner leakage from Cat 4 sumps		M_gC4s =	0.00000 (mg/s)	
mass flux of liner leakage from LOSP sumps		M_gC4LOs =	0.00000 (mg/s)	
mass flux of seepage from Overburden Ponds - PW1		M_gOp1 =	0.00093 (mg/s)	
mass flux of leakage from Haul Road Pond - PW2		M_gHRp2 =	0.00000 (mg/s)	
mass flux of leakage from Haul Road Pond - PW4		M_gHRp4 =	0.00000 (mg/s)	
mass flux of leakage from RTH Pond - PW3		M_gRTHp =	0.00000 (mg/s)	
mass flux of liner leakage from WWTF pond		M_gWTFp =	0.00001 (mg/s)	
mass flux of surface water into SW-004A		M_s4A =	0.59884 (mg/s)	
mass flux of ground water into SW-004A		M_g4A =	0.16885 (mg/s)	
mass flux of West Pit overflow		M_sms =	#N/A (mg/s)	
mass flux of liner leakage from Cat 1/2 stockpile		M_gC12 =	- (mg/s)	
mass flux of liner leakage from Cat 1/2 sumps		M_gC12s =	0.00000 (mg/s)	
mass flux of seepage from Overburden (Cat 1/2)		M_gO12 =	0.00252 (mg/s)	
mass flux of seepage from Overburden Pond - PW7		M_gOp7 =	0.00174 (mg/s)	
mass flux of surface water into SW-005		M_s5 =	0.92019 (mg/s)	
mass flux of ground water into SW-005		M_g5 =	0.27624 (mg/s)	
mass flux of surface water into USGS Gage		M_s6 =	0.09882 (mg/s)	
mass flux of ground water into USGS Gage		M_g6 =	0.05719 (mg/s)	
mass flux of surface water into Colby Lake		M_scl =	0.60007 (mg/s)	
mass flux of ground water into Colby Lake		M_gcl =	0.14238 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP		M_shl =	0.00993 (mg/s)	
		Average Flow		
Mass balance at each node	mass flux in river at SW-001	M_r1 =	0.2587 (mg/s)	
	mass flux in river at SW-002	M_r2 =	0.4341 (mg/s)	
	mass flux in river at SW-003	M_r3 =	0.4877 (mg/s)	
	mass flux in river at SW-004	M_r4 =	0.6796 (mg/s)	
	mass flux in river at SW-004A	M_r4A =	1.4516 (mg/s)	
	mass flux in river at SW-005	M_r5 =	2.6480 (mg/s)	
	mass flux in river at USGS Gage	M_r6 =	2.8040 (mg/s)	
mass flux into Colby Lake	M_cl =	3.5564 (mg/s)		
		Average Flow		
Convert mass flux to concentration	concentration in river at SW-001	C_r1 =	0.00160 (mg/L)	
	concentration in river at SW-002	C_r2 =	0.00136 (mg/L)	
	concentration in river at SW-003	C_r3 =	0.00132 (mg/L)	
	concentration in river at SW-004	C_r4 =	0.00125 (mg/L)	
	concentration in river at SW-004A	C_r4A =	0.00116 (mg/L)	
	concentration in river at SW-005	C_r5 =	0.00113 (mg/L)	
	concentration in river at USGS Gage	C_r6 =	0.00114 (mg/L)	
	concentration in Colby Lake	C_cl =	0.00112 (mg/L)	



Partridge River Mass-Balance--Mine Site-Proposed Action

Case	Year 5		
Parameter	Zinc		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0160 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0160 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0160 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0160 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0160 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0160 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0160 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0160 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0620 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0073 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0275 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0275 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0275 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0275 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0275 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0275 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0275 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0275 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0900 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.0900 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0900 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	26.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	26.0000 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0046 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0030 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0900 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.0900 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0900 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	26.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	26.0000 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0046 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	0.0046 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0275 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0275 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0275 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	7.8200 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	2.04684 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.14009 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.20744 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	2.38821 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.26234 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.71889 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.08281 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00005 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	2.64631 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.24554 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00367 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00559 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00987 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00001 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00002 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00244 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00001 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00002 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00020 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	10.64599 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	1.07986 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.00540 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	0.00458 (mg/s)
	mass flux of surface water into SW-005	M_s5 =	16.35889 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	1.76663 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	1.75676 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.36578 (mg/s)
mass flux of surface water into Colby Lake	M_scl =	10.66797 (mg/s)	
mass flux of ground water into Colby Lake	M_gcl =	0.91055 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.68429 (mg/s)	
Mass balance at each node	mass flux in river at SW-001	M_r1 =	2.3944 (mg/s)
	mass flux in river at SW-002	M_r2 =	5.0449 (mg/s)
	mass flux in river at SW-003	M_r3 =	5.8467 (mg/s)
	mass flux in river at SW-004	M_r4 =	8.7604 (mg/s)
	mass flux in river at SW-004A	M_r4A =	20.4962 (mg/s)
	mass flux in river at SW-005	M_r5 =	38.6217 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	40.7443 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	53.0071 (mg/s)
Convert mass flux to concentration	concentration in river at SW-001	C_r1 =	0.01484 (mg/L)
	concentration in river at SW-002	C_r2 =	0.01576 (mg/L)
	concentration in river at SW-003	C_r3 =	0.01588 (mg/L)
	concentration in river at SW-004	C_r4 =	0.01607 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.01636 (mg/L)
	concentration in river at SW-005	C_r5 =	0.01651 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.01655 (mg/L)
	concentration in Colby Lake	C_cl =	0.01670 (mg/L)



## Partridge River Mass-Balance--Mine Site-Proposed Action

### FLOWS

Case Flow	Year 5 High Flow Conditions			
Total flow in Partridge River	flow in river at SW-001	Q_r1_H =	85.35	(cfs)
	flow in river at SW-002	Q_r2_H =	173.06	(cfs)
	flow in river at SW-003	Q_r3_H =	229.43	(cfs)
	flow in river at SW-004	Q_r4_H =	286.99	(cfs)
	flow in river at SW-004A	Q_r4a_H =	929.28	(cfs)
	flow in river at SW-005	Q_r5_H =	1,090.71	(cfs)
	flow in river at USGS Gage	Q_r6_H =	1,091.83	(cfs)
	total flow into Colby Lake	Q_cl_H =	1,429.36	(cfs)
	flow check	Q_ck_H =	1,429.36	(cfs)
Input flow data	surface water flow into SW-001	Q_s1_H =	84.17	(cfs)
	surface water flow into SW-002	Q_s2_H =	87.38	(cfs)
	surface water flow into SW-003	Q_s3_H =	56.26	(cfs)
	surface water flow into SW-004	Q_s4_H =	57.15	(cfs)
	surface water flow into SW-004A	Q_s4a_H =	640.65	(cfs)
	surface water flow into SW-005	Q_s5_H =	159.17	(cfs)
	surface water flow into USGS Gage	Q_s6_H =	0.65	(cfs)
	surface water flow into Colby Lake	Q_scl_H =	335.97	(cfs)
	surface water inflow from Hoyt Lakes WWTP	Q_shl_H =	0.39	(cfs)
	surface water inflow from discharges upstream of PM-1	Q_sns_H =	1.00	(cfs)
	surface water flow from West Pit overflow	Q_sms_H =	-	(cfs)
	ground water flow into SW-001	Q_g1_H =	0.18	(cfs)
	ground water flow into SW-002	Q_g2_H =	0.34	(cfs)
	ground water flow into SW-003	Q_g3_H =	0.11	(cfs)
	ground water flow into SW-004	Q_g4_H =	0.32	(cfs)
	ground water flow into SW-004A	Q_g4a_H =	1.39	(cfs)
	ground water flow into SW-005	Q_g5_H =	2.27	(cfs)
	ground water flow into USGS Gage	Q_g6_H =	0.47	(cfs)
	ground water flow into Colby Lake	Q_gcl_H =	1.17	(cfs)
	ground water seepage from East Pit to SW-003	Q_gep_003_H =	-	(cfs)
	ground water seepage from East Pit to SW-004	Q_gep_004_H =	-	(cfs)
	ground water seepage from West Pit	Q_gwp_H =	-	(cfs)
	ground water liner leakage from Cat 1/2 stockpile	Q_gC12_H =	-	(cfs)
	ground water liner leakage from Cat 3 stockpile to SW-003	Q_gC3_003_H =	0.0001	(cfs)
	ground water liner leakage from Cat 3 stockpile to SW-004	Q_gC3_004_H =	-	(cfs)
	ground water liner leakage from Cat 3LO stockpile to SW-003	Q_gC3LO_003_H =	0.0001	(cfs)
	ground water liner leakage from Cat 3LO stockpile to SW-004	Q_gC3LO_004_H =	0.0001	(cfs)
	ground water liner leakage from Cat 4 stockpile	Q_gC4_H =	0.0001	(cfs)
	ground water liner leakage from LO SP	Q_gC4LO_H =	0.0002	(cfs)
	ground water seepage from Overburden Storage	Q_gOS_H =	0.0765	(cfs)
	ground water seepage from Overburden (Cat 1/2)	Q_gO12_H =	0.2108	(cfs)
	ground water liner leakage from Cat 1/2 sumps	Q_gC12s_H =	0.0000	(cfs)
	ground water liner leakage from Cat 3 sumps	Q_gC3s_H =	0.0000	(cfs)
	ground water liner leakage from Cat 3LO sumps	Q_gC3LOs_H =	0.0000	(cfs)
	ground water liner leakage from Cat 4 sumps	Q_gC4s_H =	0.0000	(cfs)
	ground water liner leakage from LO SP sumps	Q_gC4LOs_H =	0.0000	(cfs)
	ground water seepage from Overburden pond - PW1	Q_gOp1_H =	0.0189	(cfs)
	ground water seepage from Overburden pond - PW7	Q_gOp7_H =	0.0355	(cfs)
	ground water leakage from Haul Road pond - PW2	Q_gHRp2_H =	0.0000	(cfs)
	ground water leakage from Haul Road pond - PW4	Q_gHRp4_H =	0.0000	(cfs)
	ground water leakage from RTH pond - PW3	Q_gRTHp_H =	0.0000	(cfs)
	ground water liner leakage from WWTF pond	Q_gWTFp_H =	0.000001	(cfs)

Partridge River Mass-Balance--Mine Site-Proposed Action

Case	Year 5		
Parameter	Silver		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0001 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0001 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0001 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0001 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0001 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0001 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0001 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0001 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0001 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0001 (mg/L)
	concentration of West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0006 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0006 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0006 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0006 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0006 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0006 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0006 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0006 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	0.0007 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	0.0007 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0007 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0007 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.0007 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	- (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	0.0007 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C gC3s =	0.0007 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.0007 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0007 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0007 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	- (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	- (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0006 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0006 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0006 (mg/L)
	concentration of liner leakage from WWTF pond	C gWTFp =	0.0043 (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M s1 =	0.23820 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.00280 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.00340 (mg/s)
	mass flux of surface water into SW-002	M s2 =	0.24728 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.00525 (mg/s)
	mass flux of surface water into SW-003	M s3 =	0.15922 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.00166 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep 003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M gC3 003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO 003 =	0.00000 (mg/s)
mass flux of liner leakage from Cat 3 sumps to SW-003	M gC3s 003 =	0.00000 (mg/s)	
mass flux of surface water into SW-004	M s4 =	0.16173 (mg/s)	
mass flux of ground water into SW-004	M g4 =	0.00491 (mg/s)	
mass flux of seepage from East Pit to SW-004	M gep 004 =	#N/A (mg/s)	
mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)	
mass flux of liner leakage from Cat 3 stockpile to SW-004	M gC3 004 =	- (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO 004 =	0.00000 (mg/s)	
mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00000 (mg/s)	
mass flux of liner leakage from LOSP	M gC4LO =	0.00000 (mg/s)	
mass flux of seepage from Overburden (Storage)	M gOS =	- (mg/s)	
mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs 004 =	0.00000 (mg/s)	
mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)	
mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)	
mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	- (mg/s)	
mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00000 (mg/s)	
mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00000 (mg/s)	
mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)	
mass flux of liner leakage from WWTF pond	M gWTFp =	0.00000 (mg/s)	
mass flux of surface water into SW-004A	M s4A =	1.81305 (mg/s)	
mass flux of ground water into SW-004A	M g4A =	0.02160 (mg/s)	
mass flux of West Pit overflow	M sms =	#N/A (mg/s)	
mass flux of liner leakage from Cat 1/2 stockpile	M gC12 =	- (mg/s)	
mass flux of liner leakage from Cat 1/2 sumps	M gC12s =	0.00000 (mg/s)	
mass flux of seepage from Overburden (Cat 1/2)	M gO12 =	- (mg/s)	
mass flux of seepage from Overburden Pond - PW7	M gOp7 =	- (mg/s)	
mass flux of surface water into SW-005	M s5 =	0.45044 (mg/s)	
mass flux of ground water into SW-005	M g5 =	0.03533 (mg/s)	
mass flux of surface water into USGS Gage	M s6 =	0.00183 (mg/s)	
mass flux of ground water into USGS Gage	M g6 =	0.00732 (mg/s)	
mass flux of surface water into Colby Lake	M scl =	0.95080 (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	0.01821 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.00110 (mg/s)	
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M r1 =	0.2444 (mg/s)
	mass flux in river at SW-002	M r2 =	0.4969 (mg/s)
	mass flux in river at SW-003	M r3 =	0.6578 (mg/s)
	mass flux in river at SW-004	M r4 =	0.8245 (mg/s)
	mass flux in river at SW-004A	M r4A =	2.6591 (mg/s)
	mass flux in river at SW-005	M r5 =	3.1449 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M r6 =	3.1540 (mg/s)
	mass flux into Colby Lake	M cl =	4.1241 (mg/s)
	High Flow		
	concentration in river at SW-001	C r1 =	0.00010 (mg/L)
	concentration in river at SW-002	C r2 =	0.00010 (mg/L)
	concentration in river at SW-003	C r3 =	0.00010 (mg/L)
	concentration in river at SW-004	C r4 =	0.00010 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00010 (mg/L)
concentration in river at SW-005	C r5 =	0.00010 (mg/L)	
concentration in river at USGS Gage	C r6 =	0.00010 (mg/L)	
concentration in Colby Lake	C cl =	0.00011 (mg/L)	

Partridge River Mass-Balance--Mine Site-Proposed Action

Case		Year 5	
Parameter		Aluminum	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0700 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0700 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0700 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0700 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0700 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0700 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0700 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0700 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0700 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0173 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.1250 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.1250 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.1250 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.1250 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.1250 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.1250 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.1250 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.1250 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	1.6800 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	1.6800 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	1.6800 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	81.8612 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	27.1752 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.4106 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.1400 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	1.6800 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	1.6800 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	1.6800 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	81.8612 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	27.1752 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.4106 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	0.4106 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.1250 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.1250 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.1250 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	16.3000 (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M_s1 =	166.74077 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.63675 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.48959 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	173.09461 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	1.19246 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	111.45228 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.37642 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00461 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00576 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	113.21100 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	1.11611 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00576 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.32895 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.16524 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.88859 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00004 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00002 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.21972 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00005 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00010 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00041 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	1,269.13280 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	4.90844 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00004 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.83531 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	0.41280 (mg/s)
	mass flux of surface water into SW-005	M_s5 =	315.30607 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	8.03013 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	1.28156 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	1.66263 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	665.55657 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	4.13888 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.77259 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	167.8671 (mg/s)
	mass flux in river at SW-002	M_r2 =	342.1542 (mg/s)
	mass flux in river at SW-003	M_r3 =	453.9932 (mg/s)
	mass flux in river at SW-004	M_r4 =	569.9292 (mg/s)
	mass flux in river at SW-004A	M_r4A =	1,845.2186 (mg/s)
	mass flux in river at SW-005	M_r5 =	2,168.5548 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	2,171.4990 (mg/s)
	mass flux into Colby Lake	M_cl =	2,841.9670 (mg/s)
	High Flow		
	concentration in river at SW-001	C_r1 =	0.06950 (mg/L)
	concentration in river at SW-002	C_r2 =	0.06986 (mg/L)
	concentration in river at SW-003	C_r3 =	0.06992 (mg/L)
	concentration in river at SW-004	C_r4 =	0.07017 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.07016 (mg/L)
	concentration in river at SW-005	C_r5 =	0.07025 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.07028 (mg/L)
	concentration in Colby Lake	C_cl =	0.07170 (mg/L)

Partridge River Mass-Balance--Mine Site-Proposed Action

Case		Year 5	
Parameter		Arsenic	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0021 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0021 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0021 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0021 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0021 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0021 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0021 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0021 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0021 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0065 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0022 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0022 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0022 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0022 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0022 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0022 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0022 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0022 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.3427 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.7100 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.7100 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0893 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0297 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0016 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0027 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.3427 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.7100 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.7100 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0893 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0297 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0016 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	0.0016 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0022 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0022 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0022 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.3900 (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M_s1 =	5.02604 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.01100 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.18395 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	5.21757 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.02061 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	3.35949 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00650 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00195 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00243 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	3.41250 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.01929 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00243 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00036 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00018 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00038 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00083 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00001 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	38.25529 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.08482 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.01611 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	0.00157 (mg/s)
	mass flux of surface water into SW-005	M_s5 =	9.50423 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.13876 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.03863 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.02873 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	20.06178 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.07152 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.02329 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	5.2210 (mg/s)
	mass flux in river at SW-002	M_r2 =	10.4592 (mg/s)
	mass flux in river at SW-003	M_r3 =	13.8295 (mg/s)
	mass flux in river at SW-004	M_r4 =	17.2685 (mg/s)
	mass flux in river at SW-004A	M_r4A =	55.6263 (mg/s)
	mass flux in river at SW-005	M_r5 =	65.2693 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	65.3367 (mg/s)
	mass flux into Colby Lake	M_cl =	85.4933 (mg/s)
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C_r1 =	0.00216 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00214 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00213 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00213 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00212 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00211 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00211 (mg/L)
	concentration in Colby Lake	C_cl =	0.00213 (mg/L)

Partridge River Mass-Balance--Mine Site-Proposed Action

Case		Year 5	
Parameter		Boron	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0450 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0450 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0450 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0450 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0450 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0450 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0450 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0450 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0450 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0960 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0870 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0870 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0870 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0870 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0870 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0870 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0870 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0870 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.2835 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.7600 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.7600 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.7600 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.7600 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0622 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0370 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.2835 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.7600 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.7600 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.7600 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.7600 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0622 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	0.0622 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0870 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0870 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0870 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	0.9200 (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M_s1 =	107.19050 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.44318 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	2.71680 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	111.27510 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.82995 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	71.64790 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.26199 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00209 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00260 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	72.77850 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.77681 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00260 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00305 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00462 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.13461 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.03328 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00003 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00007 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00002 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	815.87108 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	3.41627 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.22076 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	0.06253 (mg/s)
	mass flux of surface water into SW-005	M_s5 =	202.69676 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	5.58897 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.82386 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	1.15719 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	427.85780 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	2.88066 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.49667 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	110.3505 (mg/s)
	mass flux in river at SW-002	M_r2 =	222.4555 (mg/s)
	mass flux in river at SW-003	M_r3 =	294.3701 (mg/s)
	mass flux in river at SW-004	M_r4 =	368.1037 (mg/s)
	mass flux in river at SW-004A	M_r4A =	1,187.6744 (mg/s)
	mass flux in river at SW-005	M_r5 =	1,395.9601 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	1,397.9411 (mg/s)
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C_r1 =	0.04569 (mg/L)
	concentration in river at SW-002	C_r2 =	0.04542 (mg/L)
	concentration in river at SW-003	C_r3 =	0.04534 (mg/L)
	concentration in river at SW-004	C_r4 =	0.04532 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.04516 (mg/L)
	concentration in river at SW-005	C_r5 =	0.04522 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.04524 (mg/L)
	concentration in Colby Lake	C_cl =	0.04650 (mg/L)

Partridge River Mass-Balance--Mine Site-Proposed Action

Case		Year 5	
Parameter		Barium	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0077 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0077 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0077 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0077 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0077 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0077 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0077 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0077 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0077 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0050 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0219 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0219 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0219 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0219 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0219 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0219 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0219 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0219 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.1900 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.1900 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.1900 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.1900 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.1900 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0168 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0140 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.1900 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.1900 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.1900 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.1900 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.1900 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0168 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	0.0168 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0219 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0219 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0219 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.2300 (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M_s1 =	18.29384 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.11166 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.14150 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	18.99095 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.20911 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	12.22791 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.06601 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00052 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00065 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	12.42086 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.19572 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00065 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00076 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00116 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.03643 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00901 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00001 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00002 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00001 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	139.24200 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.86074 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.08353 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	0.01692 (mg/s)
	mass flux of surface water into SW-005	M_s5 =	34.59358 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	1.40816 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.14061 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.29156 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	73.02106 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.72579 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.08476 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	18.5470 (mg/s)
	mass flux in river at SW-002	M_r2 =	37.7471 (mg/s)
	mass flux in river at SW-003	M_r3 =	50.0422 (mg/s)
	mass flux in river at SW-004	M_r4 =	62.7068 (mg/s)
	mass flux in river at SW-004A	M_r4A =	202.9100 (mg/s)
	mass flux in river at SW-005	M_r5 =	238.9117 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	239.3439 (mg/s)
	mass flux into Colby Lake	M_cl =	313.1755 (mg/s)
	High Flow		
	concentration in river at SW-001	C_r1 =	0.00768 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00771 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00771 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00772 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00772 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00774 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00775 (mg/L)
	concentration in Colby Lake	C_cl =	0.00810 (mg/L)



Partridge River Mass-Balance--Mine Site-Proposed Action

Case		Year 5	
Parameter		Beryllium	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0001 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0001 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0001 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0001 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0001 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0001 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0001 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0001 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0001 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0001 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0001 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0001 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0001 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0001 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0001 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0001 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0001 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0001 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0002 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0023 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0023 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	- (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0002 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0023 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0023 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	- (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	- (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0001 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0001 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0001 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0020 (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M_s1 =	0.23820 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00074 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.00283 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	0.24728 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.00138 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.15922 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00044 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.16173 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.00129 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00001 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	- (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00000 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	1.81305 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.00569 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	- (mg/s)
	mass flux of surface water into SW-005	M_s5 =	0.45044 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.00931 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.00183 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.00193 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	0.95080 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.00480 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00110 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	0.2418 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.4904 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.6501 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.8131 (mg/s)
	mass flux in river at SW-004A	M_r4A =	2.6319 (mg/s)
	mass flux in river at SW-005	M_r5 =	3.0916 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	3.0954 (mg/s)
	mass flux into Colby Lake	M_cl =	4.0521 (mg/s)
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C_r1 =	0.00010 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00010 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00010 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00010 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00010 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00010 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00010 (mg/L)
	concentration in Colby Lake	C_cl =	0.00010 (mg/L)

# Partridge River Mass-Balance--Mine Site-Proposed Action

Case	Year 5		
Parameter	Calcium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	17.0000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	17.0000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	17.0000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	17.0000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	17.0000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	17.0000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	17.0000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	17.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	17.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	24.5000 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	14.7900 (mg/L)
	concentration of ground water into SW-002	C_g2 =	14.7900 (mg/L)
	concentration of ground water into SW-003	C_g3 =	14.7900 (mg/L)
	concentration of ground water into SW-004	C_g4 =	14.7900 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	14.7900 (mg/L)
	concentration of ground water into SW-005	C_g5 =	14.7900 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	14.7900 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	14.7900 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	87.9339 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	496.9896 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	540.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	181.8289 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	60.3612 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	9.3700 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	15.8000 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	87.9339 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	496.9896 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_g3LOs =	540.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	181.8289 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	60.3612 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	9.3700 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	9.3700 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	14.7900 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	14.7900 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	14.7900 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	396.0000 (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M_s1 =	40,494.18700 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	75.34026 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	693.35000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	42,037.26142 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	141.09146 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	27,066.98280 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	44.53811 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	1.36490 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	1.85014 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00026 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	27,494.10103 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	132.05814 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	1.85014 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.73066 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.36702 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	20.27794 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00053 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00008 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00006 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	5.01400 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00563 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.01206 (mg/s)
mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)	
mass flux of liner leakage from WWTF pond	M_gWTFp =	0.01000 (mg/s)	
mass flux of surface water into SW-004A	M_s4A =	308,217.96534 (mg/s)	
mass flux of ground water into SW-004A	M_g4A =	580.76605 (mg/s)	
mass flux of West Pit overflow	M_sms =	#N/A (mg/s)	
mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	- (mg/s)	
mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00193 (mg/s)	
mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	94.27085 (mg/s)	
mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	9.42024 (mg/s)	
mass flux of surface water into SW-005	M_s5 =	76,574.33105 (mg/s)	
mass flux of ground water into SW-005	M_g5 =	950.12439 (mg/s)	
mass flux of surface water into USGS Gage	M_s6 =	311.23615 (mg/s)	
mass flux of ground water into USGS Gage	M_g6 =	196.72179 (mg/s)	
mass flux of surface water into Colby Lake	M_scl =	161,635.16700 (mg/s)	
mass flux of ground water into Colby Lake	M_gcl =	489.71169 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M_shl =	187.62900 (mg/s)	
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	41,262.8773 (mg/s)
	mass flux in river at SW-002	M_r2 =	83,441.2301 (mg/s)
	mass flux in river at SW-003	M_r3 =	110,555.9664 (mg/s)
	mass flux in river at SW-004	M_r4 =	138,210.3939 (mg/s)
	mass flux in river at SW-004A	M_r4A =	447,112.8183 (mg/s)
	mass flux in river at SW-005	M_r5 =	524,637.2737 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	525,145.2317 (mg/s)
	mass flux into Colby Lake	M_cl =	687,457.7394 (mg/s)
	Convert mass flux to concentration	High Flow	
concentration in river at SW-001		C_r1 =	17.08321 (mg/L)
concentration in river at SW-002		C_r2 =	17.03673 (mg/L)
concentration in river at SW-003		C_r3 =	17.02716 (mg/L)
concentration in river at SW-004		C_r4 =	17.01709 (mg/L)
concentration in river at SW-004A		C_r4A =	17.00141 (mg/L)
concentration in river at SW-005		C_r5 =	16.99660 (mg/L)
concentration in river at USGS Gage		C_r6 =	16.99566 (mg/L)
concentration in Colby Lake		C_cl =	16.96591 (mg/L)

Partridge River Mass-Balance--Mine Site-Proposed Action

Case		Year 5	
Parameter		Cadmium	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0001 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0001 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0001 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0001 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0001 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0001 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0001 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0001 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0001 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0001 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0001 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0001 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0001 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0001 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0001 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0001 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0001 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0001 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0002 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0149 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0149 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0001 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0002 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0149 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0149 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0001 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	0.0001 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0001 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0001 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0001 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0063 (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M_s1 =	0.23820 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00051 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.00283 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	0.24728 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.00095 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.15922 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00030 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.16173 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.00089 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00006 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00009 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00013 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00003 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00000 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	1.81305 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.00393 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	0.00006 (mg/s)
	mass flux of surface water into SW-005	M_s5 =	0.45044 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.00642 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.00183 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.00133 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	0.95080 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.00331 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00110 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	0.2415 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.4898 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.6493 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.8122 (mg/s)
	mass flux in river at SW-004A	M_r4A =	2.6293 (mg/s)
	mass flux in river at SW-005	M_r5 =	3.0861 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	3.0893 (mg/s)
	mass flux into Colby Lake	M_cl =	4.0445 (mg/s)
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C_r1 =	0.00010 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00010 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00010 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00010 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00010 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00010 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00010 (mg/L)
	concentration in Colby Lake	C_cl =	0.00010 (mg/L)

Partridge River Mass-Balance--Mine Site-Proposed Action

Case	Year 5		
Parameter	Chloride		
Input concentration data	concentration of surface water into SW-001	C s1 =	8.0000 (mg/L)
	concentration of surface water into SW-002	C s2 =	8.0000 (mg/L)
	concentration of surface water into SW-003	C s3 =	8.0000 (mg/L)
	concentration of surface water into SW-004	C s4 =	8.0000 (mg/L)
	concentration of surface water into SW-004A	C s4A =	8.0000 (mg/L)
	concentration of surface water into SW-005	C s5 =	8.0000 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	8.0000 (mg/L)
	concentration of surface water into Colby Lake	C scl =	8.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	8.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	1.6000 (mg/L)
	concentration of West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	6.6000 (mg/L)
	concentration of ground water into SW-002	C g2 =	6.6000 (mg/L)
	concentration of ground water into SW-003	C g3 =	6.6000 (mg/L)
	concentration of ground water into SW-004	C g4 =	6.6000 (mg/L)
	concentration of ground water into SW-004A	C g4A =	6.6000 (mg/L)
	concentration of ground water into SW-005	C g5 =	6.6000 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	6.6000 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	6.6000 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	10.3212 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	6.0102 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	4.5875 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	6.5052 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.3289 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	5.3500 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	2.3300 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	10.3212 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C gC3s =	6.0102 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	4.5875 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	6.5052 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.3289 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	5.3500 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	5.3500 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	6.6000 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	6.6000 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	6.6000 (mg/L)
	concentration of liner leakage from WWTF pond	C gWTFp =	27.7000 (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M s1 =	19,056.08800 (mg/s)
	mass flux of ground water into SW-001	M g1 =	33.62040 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	45.28000 (mg/s)
	mass flux of surface water into SW-002	M s2 =	19,782.24067 (mg/s)
	mass flux of ground water into SW-002	M g2 =	62.96171 (mg/s)
	mass flux of surface water into SW-003	M s3 =	12,737.40367 (mg/s)
	mass flux of ground water into SW-003	M g3 =	19.87502 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M gC3_003 =	0.01651 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_00 =	0.01572 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	12,938.40048 (mg/s)
	mass flux of ground water into SW-004	M g4 =	58.93061 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_00 =	0.01572 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.02614 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00200 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	11.57812 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_0 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	2.86285 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00251 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00538 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00070 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	145,043.74839 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	259.16538 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M gC12s =	0.00023 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M gO12 =	13.90197 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	5.37868 (mg/s)
	mass flux of surface water into SW-005	M s5 =	36,034.97932 (mg/s)
	mass flux of ground water into SW-005	M g5 =	423.99060 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	146.46407 (mg/s)
mass flux of ground water into USGS Gage	M g6 =	87.78660 (mg/s)	
mass flux of surface water into Colby Lake	M scl =	76,063.60800 (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	218.53260 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	88.29600 (mg/s)	
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M r1 =	19,134.9884 (mg/s)
	mass flux in river at SW-002	M r2 =	38,980.1908 (mg/s)
	mass flux in river at SW-003	M r3 =	51,737.5017 (mg/s)
	mass flux in river at SW-004	M r4 =	64,749.3262 (mg/s)
	mass flux in river at SW-004A	M r4A =	210,071.5209 (mg/s)
	mass flux in river at SW-005	M r5 =	246,530.4908 (mg/s)
	mass flux in river at USGS Gage	M r6 =	246,764.7415 (mg/s)
	mass flux into Colby Lake	M cl =	323,135.1781 (mg/s)
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C r1 =	7.92206 (mg/L)
	concentration in river at SW-002	C r2 =	7.95884 (mg/L)
	concentration in river at SW-003	C r3 =	7.96830 (mg/L)
	concentration in river at SW-004	C r4 =	7.97223 (mg/L)
	concentration in river at SW-004A	C r4A =	7.98795 (mg/L)
	concentration in river at SW-005	C r5 =	7.98682 (mg/L)
	concentration in river at USGS Gage	C r6 =	7.98623 (mg/L)
	concentration in Colby Lake	C cl =	7.92434 (mg/L)

Partridge River Mass-Balance--Mine Site-Proposed Action

Case		Year 5	
Parameter		Cobalt	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0005 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0005 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0005 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0005 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0005 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0005 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0005 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0005 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0005 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0005 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0017 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0017 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0017 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0017 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0017 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0017 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0017 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0017 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0055 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.0520 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0520 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	6.4006 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	2.1248 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0011 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0013 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0055 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.0520 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0520 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	6.4006 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	2.1248 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0011 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	0.0011 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0017 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0017 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0017 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	1.8200 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	1.19101 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00841 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.01415 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	1.23639 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.01574 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.79609 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00497 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00014 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00	0.00018 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.80865 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.01473 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00	0.00018 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.02572 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.01292 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00240 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00059 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00005 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	9.06523 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.06479 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.00776 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	0.00112 (mg/s)
	mass flux of surface water into SW-005	M_s5 =	2.25219 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.10600 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.00915 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.02195 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	4.75398 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.05463 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00552 (mg/s)
Mass balance at each node	mass flux in river at SW-001	M_r1 =	1.2138 (mg/s)
	mass flux in river at SW-002	M_r2 =	2.4657 (mg/s)
	mass flux in river at SW-003	M_r3 =	3.2671 (mg/s)
	mass flux in river at SW-004	M_r4 =	4.1323 (mg/s)
	mass flux in river at SW-004A	M_r4A =	13.2712 (mg/s)
	mass flux in river at SW-005	M_r5 =	15.6294 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	15.6605 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	20.4746 (mg/s)
	concentration in river at SW-001	C_r1 =	0.00050 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00050 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00050 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00051 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00050 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00051 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00051 (mg/L)
	concentration in Colby Lake	C_cl =	0.00054 (mg/L)

Partridge River Mass-Balance--Mine Site-Proposed Action

Case Parameter	Year 5 Copper		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0017 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0017 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0017 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0017 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0017 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0017 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0017 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0017 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0190 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0012 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0030 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0030 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0030 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0030 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0030 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0030 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0030 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0030 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0920 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.0920 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0920 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	1.1553 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.3835 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0214 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0170 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0920 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.0920 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0920 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	1.1553 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.3835 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0214 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	0.0214 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0030 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0030 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0030 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.3400 (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M_s1 =	4.04942 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.01503 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.03509 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	4.20373 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.02814 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	2.70670 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00888 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00025 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00032 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	2.74941 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.02634 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00032 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00464 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00233 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.04640 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.01147 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00001 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	30.82180 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.11584 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.10143 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	0.02155 (mg/s)
	mass flux of surface water into SW-005	M_s5 =	7.65743 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.18951 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.03112 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.03924 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	16.16352 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.09768 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.20970 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	4.0995 (mg/s)
	mass flux in river at SW-002	M_r2 =	8.3314 (mg/s)
	mass flux in river at SW-003	M_r3 =	11.0476 (mg/s)
	mass flux in river at SW-004	M_r4 =	13.8885 (mg/s)
	mass flux in river at SW-004A	M_r4A =	44.9491 (mg/s)
	mass flux in river at SW-005	M_r5 =	52.7960 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	52.8664 (mg/s)
	mass flux into Colby Lake	M_cl =	69.3373 (mg/s)
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C_r1 =	0.00170 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00170 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00170 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00171 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00171 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00171 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00171 (mg/L)
	concentration in Colby Lake	C_cl =	0.00179 (mg/L)



Partridge River Mass-Balance--Mine Site-Proposed Action

Case		Year 5	
Parameter		Fluoride	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0700 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0700 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0700 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0700 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0700 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0700 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0700 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0700 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0700 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.1400 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.2800 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.2800 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.2800 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.2800 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.2800 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.2800 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.2800 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.2800 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0629 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.0622 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0621 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0627 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0630 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.2239 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.4200 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0629 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.0622 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0621 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0627 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0630 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.2239 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	0.2239 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.2800 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.2800 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.2800 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	8.5600 (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M_s1 =	166.74077 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	1.42632 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	3.96200 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	173.09461 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	2.67110 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	111.45228 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.84318 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00017 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00021 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	113.21100 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	2.50009 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00021 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00025 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00038 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.48453 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.11981 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00011 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00023 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00022 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	1,269.13280 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	10.99489 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	2.50593 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	0.22509 (mg/s)
	mass flux of surface water into SW-005	M_s5 =	315.30607 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	17.98748 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	1.28156 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	3.72428 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	665.55657 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	9.27108 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.77259 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	172.1291 (mg/s)
	mass flux in river at SW-002	M_r2 =	347.8948 (mg/s)
	mass flux in river at SW-003	M_r3 =	460.1906 (mg/s)
	mass flux in river at SW-004	M_r4 =	576.5075 (mg/s)
	mass flux in river at SW-004A	M_r4A =	1,859.3662 (mg/s)
	mass flux in river at SW-005	M_r5 =	2,192.6567 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	2,197.6656 (mg/s)
	mass flux into Colby Lake	M_cl =	2,873.2658 (mg/s)
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C_r1 =	0.07126 (mg/L)
	concentration in river at SW-002	C_r2 =	0.07103 (mg/L)
	concentration in river at SW-003	C_r3 =	0.07088 (mg/L)
	concentration in river at SW-004	C_r4 =	0.07098 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.07070 (mg/L)
	concentration in river at SW-005	C_r5 =	0.07104 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.07112 (mg/L)
	concentration in Colby Lake	C_cl =	0.07678 (mg/L)

Partridge River Mass-Balance--Mine Site-Proposed Action

Case		Year 5	
Parameter		Iron	
Input concentration data	concentration of surface water into SW-001	C_s1 =	1.6000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	1.6000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	1.6000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	1.6000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	1.6000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	1.6000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	1.6000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	1.6000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	1.6000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0300 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	2.8440 (mg/L)
	concentration of ground water into SW-002	C_g2 =	2.8440 (mg/L)
	concentration of ground water into SW-003	C_g3 =	2.8440 (mg/L)
	concentration of ground water into SW-004	C_g4 =	2.8440 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	2.8440 (mg/L)
	concentration of ground water into SW-005	C_g5 =	2.8440 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	2.8440 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	2.8440 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.8100 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.8100 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.8100 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	235.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	235.0000 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.2255 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.1500 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.8100 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.8100 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.8100 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	235.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	235.0000 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.2255 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	0.2255 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	2.8440 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	2.8440 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	2.8440 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	74.0000 (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M_s1 =	3,811.21760 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	14.48734 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.84900 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	3,956.44813 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	27.13077 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	2,547.48073 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	8.56433 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00222 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00278 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	2,587.68010 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	25.39374 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00278 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.94432 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	1.42891 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.48801 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00011 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00021 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.12067 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00108 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00232 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00187 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	29,008.74968 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	111.67672 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00002 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.89498 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	0.22671 (mg/s)
	mass flux of surface water into SW-005	M_s5 =	7,206.99586 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	182.70140 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	29.29281 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	37.82804 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	15,212.72160 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	94.16768 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	17.65920 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	3,826.5539 (mg/s)
	mass flux in river at SW-002	M_r2 =	7,810.1328 (mg/s)
	mass flux in river at SW-003	M_r3 =	10,366.1829 (mg/s)
	mass flux in river at SW-004	M_r4 =	12,982.2470 (mg/s)
	mass flux in river at SW-004A	M_r4A =	42,103.7951 (mg/s)
	mass flux in river at SW-005	M_r5 =	49,493.4924 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	49,560.6132 (mg/s)
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C_r1 =	1.58423 (mg/L)
	concentration in river at SW-002	C_r2 =	1.59465 (mg/L)
	concentration in river at SW-003	C_r3 =	1.59654 (mg/L)
	concentration in river at SW-004	C_r4 =	1.59843 (mg/L)
	concentration in river at SW-004A	C_r4A =	1.60099 (mg/L)
	concentration in river at SW-005	C_r5 =	1.60343 (mg/L)
	concentration in river at USGS Gage	C_r6 =	1.60397 (mg/L)
	concentration in Colby Lake	C_cl =	1.62847 (mg/L)

Partridge River Mass-Balance--Mine Site-Proposed Action

Case	Year 5		
Parameter	Hardness		
Input concentration data	concentration of surface water into SW-001	C s1 =	110.0000 (mg/L)
	concentration of surface water into SW-002	C s2 =	110.0000 (mg/L)
	concentration of surface water into SW-003	C s3 =	110.0000 (mg/L)
	concentration of surface water into SW-004	C s4 =	110.0000 (mg/L)
	concentration of surface water into SW-004A	C s4A =	110.0000 (mg/L)
	concentration of surface water into SW-005	C s5 =	110.0000 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	110.0000 (mg/L)
	concentration of surface water into Colby Lake	C scl =	110.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	110.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	110.0000 (mg/L)
	concentration of West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	66.4200 (mg/L)
	concentration of ground water into SW-002	C g2 =	66.4200 (mg/L)
	concentration of ground water into SW-003	C g3 =	66.4200 (mg/L)
	concentration of ground water into SW-004	C g4 =	66.4200 (mg/L)
	concentration of ground water into SW-004A	C g4A =	66.4200 (mg/L)
	concentration of ground water into SW-005	C g5 =	66.4200 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	66.4200 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	66.4200 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	284.9794 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	1,585.7425 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	1,729.3495 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	1,301.9183 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	432.1936 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	43.5200 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	71.5000 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	284.9794 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C gC3s =	1,585.7425 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	1,729.3495 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	1,301.9183 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	432.1936 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	43.5200 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	43.5200 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	66.4200 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	66.4200 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	66.4200 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	1,565.0000 (mg/L)

Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M s1 =	262,021.21000 (mg/s)
	mass flux of ground water into SW-001	M g1 =	338.34348 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	3,113.00000 (mg/s)
	mass flux of surface water into SW-002	M s2 =	272,005.80921 (mg/s)
	mass flux of ground water into SW-002	M g2 =	633.62374 (mg/s)
	mass flux of surface water into SW-003	M s3 =	175,139.30046 (mg/s)
	mass flux of ground water into SW-003	M g3 =	200.01496 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep 003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M gC3 003 =	4.35498 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO 00 =	5.92506 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M gC3s 003 =	0.00083 (mg/s)
	mass flux of surface water into SW-004	M s4 =	177,903.00666 (mg/s)
	mass flux of ground water into SW-004	M g4 =	593.05624 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep 004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M gC3 004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO 00 =	5.92506 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	5.23160 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	2.62793 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	94.18314 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs 0 =	0.00170 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00059 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00039 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	23.28806 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.02527 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.05414 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00002 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.03951 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	##### (mg/s)
	mass flux of ground water into SW-004A	M g4A =	2,608.14612 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M gC12s =	0.00624 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M gO12 =	426.60542 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	43.75333 (mg/s)
	mass flux of surface water into SW-005	M s5 =	495,480.96560 (mg/s)
	mass flux of ground water into SW-005	M g5 =	4,266.88722 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	2,013.88098 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	883.45242 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	##### (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	2,199.23262 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl =	1,214.07000 (mg/s)

Mass balance at each node	High Flow		
	mass flux in river at SW-001	M r1 =	265,472.5535 (mg/s)
	mass flux in river at SW-002	M r2 =	538,111.9864 (mg/s)
	mass flux in river at SW-003	M r3 =	713,461.5827 (mg/s)
	mass flux in river at SW-004	M r4 =	892,089.0239 (mg/s)
	mass flux in river at SW-004A	M r4A =	2,889,519.0754 (mg/s)
	mass flux in river at SW-005	M r5 =	3,389,266.9282 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M r6 =	3,392,164.2616 (mg/s)
	mass flux into Colby Lake	M cl =	4,441,452.1743 (mg/s)
	High Flow		
	concentration in river at SW-001	C r1 =	109.90809 (mg/L)
	concentration in river at SW-002	C r2 =	109.86979 (mg/L)
	concentration in river at SW-003	C r3 =	109.88305 (mg/L)
	concentration in river at SW-004	C r4 =	109.83801 (mg/L)
	concentration in river at SW-004A	C r4A =	109.87363 (mg/L)
	concentration in river at SW-005	C r5 =	109.80163 (mg/L)
	concentration in river at USGS Gage	C r6 =	109.78307 (mg/L)
	concentration in Colby Lake	C cl =	108.65559 (mg/L)

Partridge River Mass-Balance--Mine Site-Proposed Action

Case		Year 5	
Parameter		Potassium	
Input concentration data	concentration of surface water into SW-001	C_s1 =	1.3000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	1.3000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	1.3000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	1.3000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	1.3000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	1.3000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	1.3000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	1.3000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	1.3000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	2.7000 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	1.7500 (mg/L)
	concentration of ground water into SW-002	C_g2 =	1.7500 (mg/L)
	concentration of ground water into SW-003	C_g3 =	1.7500 (mg/L)
	concentration of ground water into SW-004	C_g4 =	1.7500 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	1.7500 (mg/L)
	concentration of ground water into SW-005	C_g5 =	1.7500 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	1.7500 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	1.7500 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	49.0000 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	49.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	49.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	38.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	38.0000 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	2.2600 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	4.4500 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	49.0000 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	49.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	49.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	38.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	38.0000 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	2.2600 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	2.2600 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	1.7500 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	1.7500 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	1.7500 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	40.1000 (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M_s1 =	3,096.61430 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	8.91450 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	76.41000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	3,214.61411 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	16.69439 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	2,069.82810 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	5.26989 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.13457 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.16788 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00003 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	2,102.49008 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	15.62554 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.16788 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.15270 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.23106 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	4.89094 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00005 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00002 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00003 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	1.20935 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00067 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00143 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00101 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	23,569.60911 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	68.71809 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00107 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	26.55097 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	2.27212 (mg/s)
	mass flux of surface water into SW-005	M_s5 =	5,855.68414 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	112.42175 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	23.80041 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	23.27675 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	12,360.33630 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	57.94425 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	14.34810 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	3,181.9388 (mg/s)
	mass flux in river at SW-002	M_r2 =	6,413.2473 (mg/s)
	mass flux in river at SW-003	M_r3 =	8,488.6478 (mg/s)
	mass flux in river at SW-004	M_r4 =	10,613.4186 (mg/s)
	mass flux in river at SW-004A	M_r4A =	34,280.5699 (mg/s)
	mass flux in river at SW-005	M_r5 =	40,248.6758 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	40,295.7530 (mg/s)
	mass flux into Colby Lake	M_cl =	52,728.3816 (mg/s)
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C_r1 =	1.31735 (mg/L)
	concentration in river at SW-002	C_r2 =	1.30943 (mg/L)
	concentration in river at SW-003	C_r3 =	1.30737 (mg/L)
	concentration in river at SW-004	C_r4 =	1.30677 (mg/L)
	concentration in river at SW-004A	C_r4A =	1.30351 (mg/L)
	concentration in river at SW-005	C_r5 =	1.30393 (mg/L)
	concentration in river at USGS Gage	C_r6 =	1.30412 (mg/L)
	concentration in Colby Lake	C_cl =	1.32187 (mg/L)

Partridge River Mass-Balance--Mine Site-Proposed Action

Case		Year 5	
Parameter		Magnesium	
Input concentration data	concentration of surface water into SW-001	C_s1 =	8.0000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	8.0000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	8.0000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	8.0000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	8.0000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	8.0000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	8.0000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	8.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	8.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	10.5000 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	8.0200 (mg/L)
	concentration of ground water into SW-002	C_g2 =	8.0200 (mg/L)
	concentration of ground water into SW-003	C_g3 =	8.0200 (mg/L)
	concentration of ground water into SW-004	C_g4 =	8.0200 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	8.0200 (mg/L)
	concentration of ground water into SW-005	C_g5 =	8.0200 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	8.0200 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	8.0200 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	15.9634 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	84.1672 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	93.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	206.1805 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	68.4451 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	4.8800 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	9.0100 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	15.9634 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	84.1672 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	93.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	206.1805 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	68.4451 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	4.8800 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	4.8800 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	8.0200 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	8.0200 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	8.0200 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	141.0000 (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M_s1 =	19,056.08800 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	40.85388 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	297.15000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	19,782.24067 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	76.50802 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	12,737.40367 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	24.15116 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.23115 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.31863 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00004 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	12,938.40048 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	71.60962 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.31863 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.82851 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.41618 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	10.56098 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00009 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00009 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00006 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	2.61135 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00305 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00654 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00356 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	145,043.74839 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	314.92520 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00035 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	53.75825 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	4.90616 (mg/s)
	mass flux of surface water into SW-005	M_s5 =	36,034.97932 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	515.21282 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	146.46407 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	106.67402 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	76,063.60800 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	265.55022 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	88.29600 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	19,394.0919 (mg/s)
	mass flux in river at SW-002	M_r2 =	39,252.8406 (mg/s)
	mass flux in river at SW-003	M_r3 =	52,014.9452 (mg/s)
	mass flux in river at SW-004	M_r4 =	65,039.7044 (mg/s)
	mass flux in river at SW-004A	M_r4A =	210,457.0428 (mg/s)
	mass flux in river at SW-005	M_r5 =	247,007.2349 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	247,260.3730 (mg/s)
	mass flux into Colby Lake	M_cl =	323,677.8272 (mg/s)
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C_r1 =	8.02933 (mg/L)
	concentration in river at SW-002	C_r2 =	8.01451 (mg/L)
	concentration in river at SW-003	C_r3 =	8.01103 (mg/L)
	concentration in river at SW-004	C_r4 =	8.00798 (mg/L)
	concentration in river at SW-004A	C_r4A =	8.00260 (mg/L)
	concentration in river at SW-005	C_r5 =	8.00226 (mg/L)
	concentration in river at USGS Gage	C_r6 =	8.00227 (mg/L)
	concentration in Colby Lake	C_cl =	8.01123 (mg/L)



Partridge River Mass-Balance--Mine Site-Proposed Action

Case		Year 5	
Parameter		Manganese	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.1500 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.1500 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.1500 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.1500 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.1500 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.1500 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.1500 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.1500 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.1500 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0086 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.1240 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.1240 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.1240 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.1240 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.1240 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.1240 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.1240 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.1240 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.1198 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.7500 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.7500 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	14.4722 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	4.8043 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.1604 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.1160 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.1198 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.7500 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.7500 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	14.4722 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	4.8043 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.1604 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	0.1604 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.1240 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.1240 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.1240 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	6.2200 (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M_s1 =	357.30165 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.63166 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.24338 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	370.91701 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	1.18292 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	238.82632 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.37341 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00206 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00257 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	242.59501 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	1.10718 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00257 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.05815 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.02921 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.34711 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00001 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.08583 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00005 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00010 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00016 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	2,719.57028 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	4.86917 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.69212 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	0.16125 (mg/s)
	mass flux of surface water into SW-005	M_s5 =	675.65586 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	7.96588 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	2,74620 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	1.64932 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	1,426.19265 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	4.10576 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	1.65555 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	358.1767 (mg/s)
	mass flux in river at SW-002	M_r2 =	730.2766 (mg/s)
	mass flux in river at SW-003	M_r3 =	969.4810 (mg/s)
	mass flux in river at SW-004	M_r4 =	1,213.7064 (mg/s)
	mass flux in river at SW-004A	M_r4A =	3,938.9992 (mg/s)
	mass flux in river at SW-005	M_r5 =	4,622.6209 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	4,627.0164 (mg/s)
	mass flux into Colby Lake	M_cl =	6,058.9704 (mg/s)
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C_r1 =	0.14829 (mg/L)
	concentration in river at SW-002	C_r2 =	0.14911 (mg/L)
	concentration in river at SW-003	C_r3 =	0.14931 (mg/L)
	concentration in river at SW-004	C_r4 =	0.14944 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.14978 (mg/L)
	concentration in river at SW-005	C_r5 =	0.14976 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.14975 (mg/L)
	concentration in Colby Lake	C_cl =	0.14857 (mg/L)



Partridge River Mass-Balance--Mine Site-Proposed Action

Case	Year 5		
Parameter	Sodium		
Input concentration data	concentration of surface water into SW-001	C s1 =	2.5000 (mg/L)
	concentration of surface water into SW-002	C s2 =	2.5000 (mg/L)
	concentration of surface water into SW-003	C s3 =	2.5000 (mg/L)
	concentration of surface water into SW-004	C s4 =	2.5000 (mg/L)
	concentration of surface water into SW-004A	C s4A =	2.5000 (mg/L)
	concentration of surface water into SW-005	C s5 =	2.5000 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	2.5000 (mg/L)
	concentration of surface water into Colby Lake	C scl =	2.5000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	2.5000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	4.8000 (mg/L)
	concentration of West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	13.3300 (mg/L)
	concentration of ground water into SW-002	C g2 =	13.3300 (mg/L)
	concentration of ground water into SW-003	C g3 =	13.3300 (mg/L)
	concentration of ground water into SW-004	C g4 =	13.3300 (mg/L)
	concentration of ground water into SW-004A	C g4A =	13.3300 (mg/L)
	concentration of ground water into SW-005	C g5 =	13.3300 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	13.3300 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	13.3300 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	89.4908 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	278.8801 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	378.0247 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	77.9078 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	25.8628 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	4.6000 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	7.1900 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	89.4908 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C gC3s =	278.8801 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	378.0247 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	77.9078 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	25.8628 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	4.6000 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	4.6000 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	13.3300 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	13.3300 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	13.3300 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	358.0000 (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M s1 =	5,955.02750 (mg/s)
	mass flux of ground water into SW-001	M g1 =	67.90302 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	135.84000 (mg/s)
	mass flux of surface water into SW-002	M s2 =	6,181.95021 (mg/s)
	mass flux of ground water into SW-002	M g2 =	127.16357 (mg/s)
	mass flux of surface water into SW-003	M s3 =	3,980.43865 (mg/s)
	mass flux of ground water into SW-003	M g3 =	40.14151 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep 003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M gC3_003 =	0.76590 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_00 =	1.29518 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M gC3s_003 =	0.00015 (mg/s)
	mass flux of surface water into SW-004	M s4 =	4,043.25015 (mg/s)
	mass flux of ground water into SW-004	M g4 =	119.02198 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep 004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_00 =	1.29518 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.31306 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.15726 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	9.95502 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_0 =	0.00037 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00004 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00002 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	2.46151 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00507 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.01087 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00904 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	45,326.17137 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	523.43553 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M gC12s =	0.00196 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M gO12 =	42.89920 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	4.62466 (mg/s)
	mass flux of surface water into SW-005	M s5 =	11,260.93104 (mg/s)
	mass flux of ground water into SW-005	M g5 =	856.33253 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	45.77002 (mg/s)
mass flux of ground water into USGS Gage	M g6 =	177.30233 (mg/s)	
mass flux of surface water into Colby Lake	M scl =	23,769.87750 (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	441.36963 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	27.59250 (mg/s)	
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M r1 =	6,158.7705 (mg/s)
	mass flux in river at SW-002	M r2 =	12,467.8843 (mg/s)
	mass flux in river at SW-003	M r3 =	16,490.5257 (mg/s)
	mass flux in river at SW-004	M r4 =	20,667.0054 (mg/s)
	mass flux in river at SW-004A	M r4A =	66,564.1381 (mg/s)
	mass flux in river at SW-005	M r5 =	78,681.4017 (mg/s)
	mass flux in river at USGS Gage	M r6 =	78,904.4740 (mg/s)
	mass flux into Colby Lake	M cl =	103,143.3137 (mg/s)
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C r1 =	2.54979 (mg/L)
	concentration in river at SW-002	C r2 =	2.54565 (mg/L)
	concentration in river at SW-003	C r3 =	2.53977 (mg/L)
	concentration in river at SW-004	C r4 =	2.54461 (mg/L)
	concentration in river at SW-004A	C r4A =	2.53109 (mg/L)
	concentration in river at SW-005	C r5 =	2.54903 (mg/L)
	concentration in river at USGS Gage	C r6 =	2.55364 (mg/L)
	concentration in Colby Lake	C cl =	2.83588 (mg/L)

Partridge River Mass-Balance--Mine Site-Proposed Action

Case		Year 5	
Parameter		Nickel	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0016 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0016 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0016 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0016 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0016 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0016 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0016 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0016 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0033 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0016 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0163 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0163 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0163 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0163 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0163 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0163 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0163 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0163 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0355 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.8600 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.8600 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	78.2176 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	25.9656 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0080 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0190 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0355 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.8600 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.8600 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	78.2176 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	25.9656 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0080 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	0.0080 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0163 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0163 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0163 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	26.4000 (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M_s1 =	3.71594 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.08293 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.04387 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	3.85754 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.15531 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	2.48379 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.04903 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00236 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00295 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	2.52299 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.14536 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00295 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.31431 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.15788 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.01725 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00004 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00002 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00426 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00001 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00001 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00067 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	28.28353 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.63927 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.11336 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	0.00801 (mg/s)
	mass flux of surface water into SW-005	M_s5 =	7.02682 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	1.04584 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.02856 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.21654 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	14.83240 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.53905 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.03642 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	3.8427 (mg/s)
	mass flux in river at SW-002	M_r2 =	7.8566 (mg/s)
	mass flux in river at SW-003	M_r3 =	10.3937 (mg/s)
	mass flux in river at SW-004	M_r4 =	13.5594 (mg/s)
	mass flux in river at SW-004A	M_r4A =	42.6036 (mg/s)
	mass flux in river at SW-005	M_r5 =	50.6763 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	50.9214 (mg/s)
	mass flux into Colby Lake	M_cl =	66.3293 (mg/s)
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C_r1 =	0.00159 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00160 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00160 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00167 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00162 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00164 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00165 (mg/L)
	concentration in Colby Lake	C_cl =	0.00209 (mg/L)

# Partridge River Mass-Balance--Mine Site-Proposed Action

Case	Year 5		
Parameter	Lead		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0005 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0005 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0005 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0005 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0005 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0005 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0005 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0005 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0005 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0002 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0011 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0011 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0011 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0011 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0011 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0011 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0011 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0011 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0042 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.0125 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0170 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0528 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0329 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0007 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0042 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.0125 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0170 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0528 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0329 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0007 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	0.0007 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0011 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0011 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0011 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0380 (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M_s1 =	1.19101 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00571 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.00425 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	1.23639 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.01068 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.79609 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00337 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00003 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00006 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.80865 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.01000 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	Mass balance at each node	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =
mass flux of liner leakage from Cat 3LO stockpile to SW-004		M_gC3LO_00 =	0.00006 (mg/s)
mass flux of liner leakage from Cat 4 stockpile		M_gC4 =	0.00021 (mg/s)
mass flux of liner leakage from LOSP		M_gC4LO =	0.00020 (mg/s)
mass flux of seepage from Overburden (Storage)		M_gOS =	0.00146 (mg/s)
mass flux of liner leakage from Cat 3LO sumps to SW-004		M_gC3LOs_0 =	0.00000 (mg/s)
mass flux of liner leakage from Cat 4 sumps		M_gC4s =	0.00000 (mg/s)
mass flux of liner leakage from LOSP sumps		M_gC4LOs =	0.00000 (mg/s)
mass flux of seepage from Overburden Ponds - PW1		M_gOp1 =	0.00036 (mg/s)
mass flux of leakage from Haul Road Pond - PW2		M_gHRp2 =	0.00000 (mg/s)
mass flux of leakage from Haul Road Pond - PW4		M_gHRp4 =	0.00000 (mg/s)
mass flux of leakage from RTH Pond - PW3		M_gRTHp =	0.00000 (mg/s)
mass flux of liner leakage from WWTF pond		M_gWTFp =	0.00000 (mg/s)
mass flux of surface water into SW-004A		M_s4A =	9.06523 (mg/s)
mass flux of ground water into SW-004A		M_g4A =	0.04398 (mg/s)
mass flux of West Pit overflow		M_sms =	#N/A (mg/s)
mass flux of liner leakage from Cat 1/2 stockpile		M_gC12 =	- (mg/s)
mass flux of liner leakage from Cat 1/2 sumps		M_gC12s =	0.00000 (mg/s)
mass flux of seepage from Overburden (Cat 1/2)		M_gO12 =	- (mg/s)
mass flux of seepage from Overburden Pond - PW7		M_gOp7 =	0.00068 (mg/s)
mass flux of surface water into SW-005		M_s5 =	2.25219 (mg/s)
mass flux of ground water into SW-005		M_g5 =	0.07195 (mg/s)
mass flux of surface water into USGS Gage		M_s6 =	0.00915 (mg/s)
mass flux of ground water into USGS Gage		M_g6 =	0.01490 (mg/s)
mass flux of surface water into Colby Lake		M_scl =	4.75398 (mg/s)
mass flux of ground water into Colby Lake		M_gcl =	0.03708 (mg/s)
mass flux of surface water from Hoyt Lakes WWTP		M_shl =	0.00552 (mg/s)
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	M_r1 =	1.2010 (mg/s)
	concentration in river at SW-002	M_r2 =	2.4480 (mg/s)
	concentration in river at SW-003	M_r3 =	3.2476 (mg/s)
	concentration in river at SW-004	M_r4 =	4.0685 (mg/s)
	concentration in river at SW-004A	M_r4A =	13.1784 (mg/s)
	concentration in river at SW-005	M_r5 =	15.5026 (mg/s)
Convert mass flux to concentration	concentration in river at USGS Gage	M_r6 =	15.5266 (mg/s)
	concentration in Colby Lake	M_cl =	20.3232 (mg/s)
	High Flow		
	concentration in river at SW-001	C_r1 =	0.00050 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00050 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00050 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00050 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00050 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00050 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00050 (mg/L)
	concentration in Colby Lake	C_cl =	0.00052 (mg/L)

Partridge River Mass-Balance--Mine Site-Proposed Action

Case		Year 5	
Parameter		Antimony	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0015 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0015 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0015 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0015 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0015 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0015 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0015 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0015 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0015 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0015 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0015 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0015 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0015 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0015 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0015 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0015 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0015 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0015 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0800 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.0800 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0800 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0328 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0109 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0003 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0004 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0800 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.0800 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0800 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0328 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0109 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0003 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	0.0003 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0015 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0015 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0015 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0765 (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M_s1 =	3.57302 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00764 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.04245 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	3.70917 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.01431 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	2.38826 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00452 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00022 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00027 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	2.42595 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.01339 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00027 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00013 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00007 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00065 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00016 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00000 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	27.19570 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.05890 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.00239 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	0.00030 (mg/s)
	mass flux of surface water into SW-005	M_s5 =	6.75656 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.09636 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.02746 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.01995 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	14.26193 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.04967 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.01656 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	3.6231 (mg/s)
	mass flux in river at SW-002	M_r2 =	7.3466 (mg/s)
	mass flux in river at SW-003	M_r3 =	9.7399 (mg/s)
	mass flux in river at SW-004	M_r4 =	12.1805 (mg/s)
	mass flux in river at SW-004A	M_r4A =	39.4378 (mg/s)
	mass flux in river at SW-005	M_r5 =	46.2907 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	46.3361 (mg/s)
	mass flux into Colby Lake	M_cl =	60.6663 (mg/s)
	High Flow		
	concentration in river at SW-001	C_r1 =	0.00150 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00150 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00150 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00150 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00150 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00150 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00150 (mg/L)
	concentration in Colby Lake	C_cl =	0.00150 (mg/L)

Partridge River Mass-Balance--Mine Site-Proposed Action

Case		Year 5	
Parameter		Selenium	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0005 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0005 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0005 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0005 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0005 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0005 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0005 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0005 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0005 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0005 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0019 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0019 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0019 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0019 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0019 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0019 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0019 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0019 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0029 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.0029 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0029 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0029 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0029 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0004 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0019 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0029 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.0029 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0029 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0029 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0029 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0004 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	0.0004 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0019 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0019 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0019 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0100 (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M_s1 =	1.19101 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00973 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.01415 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	1.23639 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.01822 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.79609 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00575 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.80865 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.01705 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00001 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00002 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00096 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00024 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00000 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	9.06523 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.07500 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.01134 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	0.00045 (mg/s)
	mass flux of surface water into SW-005	M_s5 =	2.25219 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.12270 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.00915 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.02540 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	4.75398 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.06324 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00552 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	1.2149 (mg/s)
	mass flux in river at SW-002	M_r2 =	2.4695 (mg/s)
	mass flux in river at SW-003	M_r3 =	3.2714 (mg/s)
	mass flux in river at SW-004	M_r4 =	4.0983 (mg/s)
	mass flux in river at SW-004A	M_r4A =	13.2503 (mg/s)
	mass flux in river at SW-005	M_r5 =	15.6252 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	15.6598 (mg/s)
	mass flux into Colby Lake	M_cl =	20.4825 (mg/s)
	High Flow		
	concentration in river at SW-001	C_r1 =	0.00050 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00050 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00050 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00050 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00050 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00051 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00051 (mg/L)
	concentration in Colby Lake	C_cl =	0.00054 (mg/L)



Partridge River Mass-Balance--Mine Site-Proposed Action

Case Parameter	Year 5 sulfate		
Input concentration data	concentration of surface water into SW-001	C s1 =	9.0000 (mg/L)
	concentration of surface water into SW-002	C s2 =	9.0000 (mg/L)
	concentration of surface water into SW-003	C s3 =	9.0000 (mg/L)
	concentration of surface water into SW-004	C s4 =	9.0000 (mg/L)
	concentration of surface water into SW-004A	C s4A =	9.0000 (mg/L)
	concentration of surface water into SW-005	C s5 =	9.0000 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	9.0000 (mg/L)
	concentration of surface water into Colby Lake	C scl =	9.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	22.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	22.0000 (mg/L)
	concentration of West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	16.1300 (mg/L)
	concentration of ground water into SW-002	C g2 =	16.1300 (mg/L)
	concentration of ground water into SW-003	C g3 =	16.1300 (mg/L)
	concentration of ground water into SW-004	C g4 =	16.1300 (mg/L)
	concentration of ground water into SW-004A	C g4A =	16.1300 (mg/L)
	concentration of ground water into SW-005	C g5 =	16.1300 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	16.1300 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	16.1300 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	197.8362 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	2,235.4896 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	2,340.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	8,179.3065 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	2,715.2580 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	35.1700 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	68.3000 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	197.8362 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C gC3s =	2,235.4896 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	2,340.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	8,179.3065 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	2,715.2580 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	35.1700 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	35.1700 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	16.1300 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	16.1300 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	16.1300 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	2,914.0000 (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M s1 =	21,438.09900 (mg/s)
	mass flux of ground water into SW-001	M g1 =	82.16622 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	622.60000 (mg/s)
	mass flux of surface water into SW-002	M s2 =	22,255.02075 (mg/s)
	mass flux of ground water into SW-002	M g2 =	153.87460 (mg/s)
	mass flux of surface water into SW-003	M s3 =	14,329.57913 (mg/s)
	mass flux of ground water into SW-003	M g3 =	48.57334 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep 003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M gC3_003 =	6.13940 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_00 =	8.01726 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M gC3s_003 =	0.00118 (mg/s)
	mass flux of surface water into SW-004	M s4 =	14,555.70055 (mg/s)
	mass flux of ground water into SW-004	M g4 =	144.02284 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep 004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_00 =	8.01726 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	32.86757 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	16.51000 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	76.11262 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_0 =	0.00230 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00373 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00248 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	18.81988 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00614 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.01315 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.07356 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	163,174.21694 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	633.38448 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M gC12s =	0.00434 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M gO12 =	407.51259 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	35.35856 (mg/s)
	mass flux of surface water into SW-005	M s5 =	40,539.35173 (mg/s)
	mass flux of ground water into SW-005	M g5 =	1,036.20733 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	164.77208 (mg/s)
mass flux of ground water into USGS Gage	M g6 =	214.54513 (mg/s)	
mass flux of surface water into Colby Lake	M scl =	85,571.55900 (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	534.08043 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	99.33300 (mg/s)	
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M r1 =	22,142.8652 (mg/s)
	mass flux in river at SW-002	M r2 =	44,551.7606 (mg/s)
	mass flux in river at SW-003	M r3 =	58,944.0709 (mg/s)
	mass flux in river at SW-004	M r4 =	73,796.2241 (mg/s)
	mass flux in river at SW-004A	M r4A =	238,046.7010 (mg/s)
	mass flux in river at SW-005	M r5 =	279,622.2601 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M r6 =	280,001.5773 (mg/s)
	mass flux into Colby Lake	M cl =	366,206.5497 (mg/s)
	High Flow		
	concentration in river at SW-001	C r1 =	9.16735 (mg/L)
	concentration in river at SW-002	C r2 =	9.09642 (mg/L)
	concentration in river at SW-003	C r3 =	9.07821 (mg/L)
	concentration in river at SW-004	C r4 =	9.08612 (mg/L)
	concentration in river at SW-004A	C r4A =	9.05170 (mg/L)
	concentration in river at SW-005	C r5 =	9.05889 (mg/L)
	concentration in river at USGS Gage	C r6 =	9.06189 (mg/L)
	concentration in Colby Lake	C cl =	9.32274 (mg/L)



Partridge River Mass-Balance--Mine Site-Proposed Action

Case		Year 5	
Parameter		Thallium	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0004 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0004 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0004 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0004 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0004 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0004 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0004 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0004 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0004 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0003 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0000 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0000 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0000 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0000 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0000 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0000 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0000 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0000 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0000 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0001 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0001 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0000 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0000 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0001 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0001 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0000 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	0.0000 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0000 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0000 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0000 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0072 (mg/L)
		High Flow	
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	0.95280 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00002 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.00809 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	0.98911 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.00004 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.63687 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00001 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.64692 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.00004 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00009 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00002 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00000 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	7.25219 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.00016 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	0.00004 (mg/s)
	mass flux of surface water into SW-005	M_s5 =	1.80175 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.00026 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.00732 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.00005 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	3.80318 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.00013 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00441 (mg/s)
		High Flow	
Mass balance at each node	mass flux in river at SW-001	M_r1 =	0.9609 (mg/s)
	mass flux in river at SW-002	M_r2 =	1.9501 (mg/s)
	mass flux in river at SW-003	M_r3 =	2.5870 (mg/s)
	mass flux in river at SW-004	M_r4 =	3.2340 (mg/s)
	mass flux in river at SW-004A	M_r4A =	10.4864 (mg/s)
	mass flux in river at SW-005	M_r5 =	12.2884 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	12.2958 (mg/s)
	mass flux into Colby Lake	M_cl =	16.1035 (mg/s)
		High Flow	
Convert mass flux to concentration	concentration in river at SW-001	C_r1 =	0.00040 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00040 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00040 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00040 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00040 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00040 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00040 (mg/L)
	concentration in Colby Lake	C_cl =	0.00039 (mg/L)

Partridge River Mass-Balance--Mine Site-Proposed Action

Case	Year 5			
Parameter	Vanadium			
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0009 (mg/L)	
	concentration of surface water into SW-002	C_s2 =	0.0009 (mg/L)	
	concentration of surface water into SW-003	C_s3 =	0.0009 (mg/L)	
	concentration of surface water into SW-004	C_s4 =	0.0009 (mg/L)	
	concentration of surface water into SW-004A	C_s4A =	0.0009 (mg/L)	
	concentration of surface water into SW-005	C_s5 =	0.0009 (mg/L)	
	concentration of surface water into USGS Gage	C_s6 =	0.0009 (mg/L)	
	concentration of surface water into Colby Lake	C_scl =	0.0009 (mg/L)	
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0009 (mg/L)	
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0043 (mg/L)	
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)	
	concentration of ground water into SW-001	C_g1 =	0.0043 (mg/L)	
	concentration of ground water into SW-002	C_g2 =	0.0043 (mg/L)	
	concentration of ground water into SW-003	C_g3 =	0.0043 (mg/L)	
	concentration of ground water into SW-004	C_g4 =	0.0043 (mg/L)	
	concentration of ground water into SW-004A	C_g4A =	0.0043 (mg/L)	
	concentration of ground water into SW-005	C_g5 =	0.0043 (mg/L)	
	concentration of ground water into USGS Gage	C_g6 =	0.0043 (mg/L)	
	concentration of ground water into Colby Lake	C_gcl =	0.0043 (mg/L)	
	concentration of ground water seepage from East Pit	C_ggp =	#N/A (mg/L)	
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)	
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.1310 (mg/L)	
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.1780 (mg/L)	
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.2412 (mg/L)	
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0159 (mg/L)	
	concentration of liner leakage from LOSP	C_gC4LO =	0.0053 (mg/L)	
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0017 (mg/L)	
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0014 (mg/L)	
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.1310 (mg/L)	
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.1780 (mg/L)	
	concentration of liner leakage from Cat 3LO sumps	C_g3LOs =	0.2412 (mg/L)	
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0159 (mg/L)	
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0053 (mg/L)	
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0017 (mg/L)	
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	0.0017 (mg/L)	
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0043 (mg/L)	
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0043 (mg/L)	
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0043 (mg/L)	
	concentration of liner leakage from WWTF ponc	C_gWTFp =	0.4915 (mg/L)	
	Convert concentration to mass flux			High Flow
		mass flux of surface water into SW-001	M_s1 =	2.14381 (mg/s)
		mass flux of ground water into SW-001	M_g1 =	0.02190 (mg/s)
mass flux of surface discharges from upstream of PM-1		M_sns =	0.12169 (mg/s)	
mass flux of surface water into SW-002		M_s2 =	2.22550 (mg/s)	
mass flux of ground water into SW-002		M_g2 =	0.04102 (mg/s)	
mass flux of surface water into SW-003		M_s3 =	1.43296 (mg/s)	
mass flux of ground water into SW-003		M_g3 =	0.01295 (mg/s)	
mass flux of seepage from East Pit to SW-003		M_ggp_003 =	#N/A (mg/s)	
mass flux of liner leakage from Cat 3 stockpile to SW-003		M_gC3_003 =	0.00049 (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-003		M_gC3LO_00 =	0.00083 (mg/s)	
mass flux of liner leakage from Cat 3 sumps to SW-003		M_gC3s_003 =	0.00000 (mg/s)	
mass flux of surface water into SW-004		M_s4 =	1.45557 (mg/s)	
mass flux of ground water into SW-004		M_g4 =	0.03839 (mg/s)	
mass flux of seepage from East Pit to SW-004		M_ggp_004 =	#N/A (mg/s)	
mass flux of seepage from West Pit		M_gwp =	#N/A (mg/s)	
mass flux of liner leakage from Cat 3 stockpile to SW-004		M_gC3_004 =	- (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-004		M_gC3LO_00 =	0.00083 (mg/s)	
mass flux of liner leakage from Cat 4 stockpile		M_gC4 =	0.00006 (mg/s)	
mass flux of liner leakage from LOSP		M_gC4LO =	0.00003 (mg/s)	
mass flux of seepage from Overburden (Storage)		M_gOS =	0.00374 (mg/s)	
mass flux of liner leakage from Cat 3LO sumps to SW-004		M_gC3LOs_0 =	0.00000 (mg/s)	
mass flux of liner leakage from Cat 4 sumps		M_gC4s =	0.00000 (mg/s)	
mass flux of liner leakage from LOSP sumps		M_gC4LOs =	0.00000 (mg/s)	
mass flux of seepage from Overburden Ponds - PW1		M_gOp1 =	0.00093 (mg/s)	
mass flux of leakage from Haul Road Pond - PW2		M_gHRp2 =	0.00000 (mg/s)	
mass flux of leakage from Haul Road Pond - PW4		M_gHRp4 =	0.00000 (mg/s)	
mass flux of leakage from RTH Pond - PW3		M_gRTHp =	0.00000 (mg/s)	
mass flux of liner leakage from WWTF pond		M_gWTFp =	0.00001 (mg/s)	
mass flux of surface water into SW-004A		M_s4A =	16.31742 (mg/s)	
mass flux of ground water into SW-004A		M_g4A =	0.16885 (mg/s)	
mass flux of West Pit overflow		M_sms =	#N/A (mg/s)	
mass flux of liner leakage from Cat 1/2 stockpile		M_gC12 =	- (mg/s)	
mass flux of liner leakage from Cat 1/2 sumps		M_gC12s =	0.00000 (mg/s)	
mass flux of seepage from Overburden (Cat 1/2)		M_gO12 =	0.00835 (mg/s)	
mass flux of seepage from Overburden Pond - PW7		M_gOp7 =	0.00174 (mg/s)	
mass flux of surface water into SW-005		M_s5 =	4.05394 (mg/s)	
mass flux of ground water into SW-005		M_g5 =	0.27624 (mg/s)	
mass flux of surface water into USGS Gage		M_s6 =	0.01648 (mg/s)	
mass flux of ground water into USGS Gage		M_g6 =	0.05719 (mg/s)	
mass flux of surface water into Colby Lake		M_scl =	8.55716 (mg/s)	
mass flux of ground water into Colby Lake		M_gcl =	0.14238 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP		M_shl =	0.00993 (mg/s)	
Mass balance at each node			High Flow	
	mass flux in river at SW-001	M_r1 =	2.2874 (mg/s)	
	mass flux in river at SW-002	M_r2 =	4.5539 (mg/s)	
	mass flux in river at SW-003	M_r3 =	6.0011 (mg/s)	
	mass flux in river at SW-004	M_r4 =	7.5007 (mg/s)	
	mass flux in river at SW-004A	M_r4A =	23.9971 (mg/s)	
	mass flux in river at SW-005	M_r5 =	28.3273 (mg/s)	
	mass flux in river at USGS Gage	M_r6 =	28.4009 (mg/s)	
	mass flux into Colby Lake	M_cl =	37.1104 (mg/s)	
Convert mass flux to concentration			High Flow	
	concentration in river at SW-001	C_r1 =	0.00095 (mg/L)	
	concentration in river at SW-002	C_r2 =	0.00093 (mg/L)	
	concentration in river at SW-003	C_r3 =	0.00092 (mg/L)	
	concentration in river at SW-004	C_r4 =	0.00092 (mg/L)	
	concentration in river at SW-004A	C_r4A =	0.00091 (mg/L)	
	concentration in river at SW-005	C_r5 =	0.00092 (mg/L)	
	concentration in river at USGS Gage	C_r6 =	0.00092 (mg/L)	
	concentration in Colby Lake	C_cl =	0.00102 (mg/L)	

Partridge River Mass-Balance--Mine Site-Proposed Action

Case		Year 5	
Parameter		Zinc	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0160 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0160 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0160 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0160 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0160 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0160 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0160 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0160 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0620 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0073 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0275 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0275 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0275 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0275 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0275 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0275 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0275 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0275 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0900 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.0900 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0900 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	26.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	26.0000 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0046 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0030 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0900 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.0900 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0900 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	26.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	26.0000 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0046 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	0.0046 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0275 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0275 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0275 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	7.8200 (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M_s1 =	38.11218 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.14009 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.20744 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	39.56448 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.26234 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	25.47481 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.08281 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00025 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00031 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	25.87680 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.24554 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00031 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.10448 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.15809 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00987 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00001 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00002 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00244 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00001 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00002 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00020 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	290.08750 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	1.07986 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.01790 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	0.00458 (mg/s)
	mass flux of surface water into SW-005	M_s5 =	72.06996 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	1.76663 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.29293 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.36578 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	152.12722 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.91055 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.68429 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	38.4597 (mg/s)
	mass flux in river at SW-002	M_r2 =	78.2865 (mg/s)
	mass flux in river at SW-003	M_r3 =	103.8447 (mg/s)
	mass flux in river at SW-004	M_r4 =	130.2425 (mg/s)
	mass flux in river at SW-004A	M_r4A =	421.4323 (mg/s)
	mass flux in river at SW-005	M_r5 =	495.2689 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	495.9276 (mg/s)
	mass flux into Colby Lake	M_cl =	649.6497 (mg/s)
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C_r1 =	0.01592 (mg/L)
	concentration in river at SW-002	C_r2 =	0.01598 (mg/L)
	concentration in river at SW-003	C_r3 =	0.01599 (mg/L)
	concentration in river at SW-004	C_r4 =	0.01604 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.01602 (mg/L)
	concentration in river at SW-005	C_r5 =	0.01605 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.01605 (mg/L)
	concentration in Colby Lake	C_cl =	0.01642 (mg/L)

***Appendix H.3***  
***Partridge River***  
***Proposed Action***  
***Year 10***

## Partridge River Mass-Balance Model - Mine Site - Proposed Action

### FLOWS

Case	Year 10		
Flows	Low Flow Conditions (no surface runoff)		
Total flow in Partridge River	flow in river at SW-001	Q_r1_L =	1.18 (cfs)
	flow in river at SW-002	Q_r2_L =	1.49 (cfs)
	flow in river at SW-003	Q_r3_L =	1.59 (cfs)
	flow in river at SW-004	Q_r4_L =	2.00 (cfs)
	flow in river at SW-004A	Q_r4a_L =	3.44 (cfs)
	flow in river at SW-005	Q_r5_L =	5.71 (cfs)
	flow in river at USGS Gage	Q_r6_L =	6.18 (cfs)
	total flow into Colby Lake	Q_cl_L =	7.74 (cfs)
	flow check	Q_ck_L =	7.74 (cfs)
Input flow data	surface water flow into SW-001	Q_s1_L =	- (cfs)
	surface water flow into SW-002	Q_s2_L =	- (cfs)
	surface water flow into SW-003	Q_s3_L =	- (cfs)
	surface water flow into SW-004	Q_s4_L =	- (cfs)
	surface water flow into SW-004A	Q_s4a_L =	- (cfs)
	surface water flow into SW-005	Q_s5_L =	- (cfs)
	surface water flow into USGS Gage	Q_s6_L =	- (cfs)
	surface water flow into Colby Lake	Q_scl_L =	- (cfs)
	surface water inflow from Hoyt Lakes WWTP	Q_shl_L =	0.39 (cfs)
	surface water inflow from discharges upstream of PM-1	Q_sns_L =	1.00 (cfs)
	West Pit overflow	Q_sms_L =	- (cfs)
	ground water flow into SW-001	Q_g1_L =	0.18 (cfs)
	ground water flow into SW-002	Q_g2_L =	0.31 (cfs)
	ground water flow into SW-003	Q_g3_L =	0.10 (cfs)
	ground water flow into SW-004	Q_g4_L =	0.31 (cfs)
	ground water flow into SW-004A	Q_g4a_L =	1.38 (cfs)
	ground water flow into SW-005	Q_g5_L =	2.27 (cfs)
	ground water flow into USGS Gage	Q_g6_L =	0.47 (cfs)
	ground water flow into Colby Lake	Q_gcl_L =	1.17 (cfs)
	ground water seepage from East Pit to SW-003	Q_gep_003_L =	- (cfs)
	ground water seepage from East Pit to SW-004	Q_gep_004_L =	- (cfs)
	ground water seepage from West Pit	Q_gwp_L =	- (cfs)
	ground water liner leakage from Cat 1/2 stockpile	Q_gC12_L =	0.0043 (cfs)
	ground water liner leakage from Cat 3 stockpile to SW-003	Q_gC3_003_L =	0.0000 (cfs)
	ground water liner leakage from Cat 3 stockpile to SW-004	Q_gC3_004_L =	- (cfs)
	ground water liner leakage from Cat 3LO stockpile to SW-003	Q_gC3LO_003_L =	0.0000 (cfs)
	ground water liner leakage from Cat 3LO stockpile to SW-004	Q_gC3LO_004_L =	0.0000 (cfs)
	ground water liner leakage from Cat 4 stockpile	Q_gC4_L =	0.0000 (cfs)
	ground water liner leakage from LO SP	Q_gC4LO_L =	0.0000 (cfs)
	ground water seepage from Overburden Storage	Q_gOS_L =	0.0765 (cfs)
	ground water seepage from Overburden (Cat 1/2)	Q_gO12_L =	0.0539 (cfs)
	ground water liner leakage from Cat 1/2 sumps	Q_gC12s_L =	0.0000 (cfs)
	ground water liner leakage from Cat 3 sumps	Q_gC3s_L =	0.0000 (cfs)
	ground water liner leakage from Cat 3LO sumps	Q_gC3LOs_L =	0.0000 (cfs)
	ground water liner leakage from Cat 4 sumps	Q_gC4s_L =	0.0000 (cfs)
	ground water liner leakage from LO SP sumps	Q_gC4LOs_L =	0.0000 (cfs)
	ground water seepage from Overburden pond - PW1	Q_gOp1_L =	0.0189 (cfs)
	ground water seepage from Overburden pond - PW7	Q_gOp7_L =	- (cfs)
	ground water leakage from Haul Road pond - PW2	Q_gHRp2_L =	0.0000 (cfs)
	ground water leakage from Haul Road pond - PW4	Q_gHRp4_L =	0.0000 (cfs)
	ground water leakage from RTH pond - PW3	Q_gRTHp_L =	0.0000 (cfs)
	ground water liner leakage from WWTF pond	Q_gWTFp_L =	0.000029 (cfs)

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case	Year 10		
Parameter	Silver		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0001 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0001 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0001 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0001 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0001 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0001 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0001 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0001 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0001 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0001 (mg/L)
	concentration of West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0006 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0006 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0006 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0006 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0006 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0006 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0006 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0006 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	0.0007 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	0.0007 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0007 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0007 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.0007 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	- (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	0.0007 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C gC3s =	0.0007 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.0007 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0007 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0007 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	- (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0006 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0006 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0006 (mg/L)
	concentration of liner leakage from WWTP pond	C gWTFp =	0.0043 (mg/L)

Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M s1 =	- (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.00280 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.00340 (mg/s)
	mass flux of surface water into SW-002	M s2 =	- (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.00482 (mg/s)
	mass flux of surface water into SW-003	M s3 =	- (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.00163 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep 003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M gC3 003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO 003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M gC3s 003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	- (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.00482 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep 004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M gC3 004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO 004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	- (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs 004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00000 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.02155 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M gC12 =	0.00009 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	- (mg/s)
	mass flux of ground water into SW-005	M g5 =	0.03533 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	- (mg/s)
mass flux of ground water into USGS Gage	M g6 =	0.00732 (mg/s)	
mass flux of surface water into Colby Lake	M scl =	- (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	0.01821 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.00110 (mg/s)	

Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M r1 =	0.0062 (mg/s)
	mass flux in river at SW-002	M r2 =	0.0110 (mg/s)
	mass flux in river at SW-003	M r3 =	0.0126 (mg/s)
	mass flux in river at SW-004	M r4 =	0.0175 (mg/s)
	mass flux in river at SW-004A	M r4A =	0.0391 (mg/s)
	mass flux in river at SW-005	M r5 =	0.0744 (mg/s)
	mass flux in river at USGS Gage	M r6 =	0.0817 (mg/s)
	mass flux into Colby Lake	M cl =	0.1011 (mg/s)
	Low Flow		
Convert mass flux to concentration	concentration in river at SW-001	C r1 =	0.00019 (mg/L)
	concentration in river at SW-002	C r2 =	0.00026 (mg/L)
	concentration in river at SW-003	C r3 =	0.00028 (mg/L)
	concentration in river at SW-004	C r4 =	0.00031 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00040 (mg/L)
	concentration in river at SW-005	C r5 =	0.00046 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00047 (mg/L)
	concentration in Colby Lake	C cl =	0.00015 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case		Year 10	
Parameter		Aluminum	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0700 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0700 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0700 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0700 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0700 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0700 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0700 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0700 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0700 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0173 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.1250 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.1250 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.1250 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.1250 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.1250 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.1250 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.1250 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.1250 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	1.6800 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	83.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	83.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	83.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	83.0000 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.4106 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.1400 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	1.6800 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	83.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	83.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	83.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	83.0000 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.4106 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.1250 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.1250 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.1250 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	38.7000 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.63675 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.48959 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	1.09446 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.37030 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.04594 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00839 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00004 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	1.09514 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00839 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00822 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.01092 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.88859 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00008 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00004 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00008 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.21972 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00005 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00010 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.03224 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	4.89696 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.20587 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00004 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.21353 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	8.03013 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	1.66263 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	4.13888 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.77259 (mg/s)
Mass balance at each node	mass flux in river at SW-001	M_r1 =	1.1263 (mg/s)
	mass flux in river at SW-002	M_r2 =	2.2208 (mg/s)
	mass flux in river at SW-003	M_r3 =	2.6455 (mg/s)
	mass flux in river at SW-004	M_r4 =	4.9091 (mg/s)
	mass flux in river at SW-004A	M_r4A =	10.2255 (mg/s)
	mass flux in river at SW-005	M_r5 =	18.2556 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	19.9182 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	24.8257 (mg/s)
	concentration in river at SW-001	C_r1 =	0.03373 (mg/L)
	concentration in river at SW-002	C_r2 =	0.05269 (mg/L)
	concentration in river at SW-003	C_r3 =	0.05864 (mg/L)
	concentration in river at SW-004	C_r4 =	0.08677 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.10499 (mg/L)
	concentration in river at SW-005	C_r5 =	0.11294 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.11386 (mg/L)
	concentration in Colby Lake	C_cl =	0.07633 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case		Year 10	
Parameter		Arsenic	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0021 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0021 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0021 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0021 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0021 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0021 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0021 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0021 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0021 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0065 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0022 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0022 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0022 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0022 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0022 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0022 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0022 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0022 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.7100 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.7100 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.7100 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.5264 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.1062 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0016 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0027 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.7100 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.7100 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.7100 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.5264 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.1062 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0016 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0022 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0022 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0022 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.3900 (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.01100 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.18395 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.01891 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00640 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00039 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00007 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.01892 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00007 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00005 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00338 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00083 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00032 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.08462 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.08700 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00002 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.00412 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.13876 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.02873 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.07152 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.02329 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	0.1950 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.2139 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.2207 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.2443 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.4201 (mg/s)
	mass flux in river at SW-005	M_r5 =	0.5568 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	0.5876 (mg/s)
	mass flux into Colby Lake	M_cl =	0.6824 (mg/s)
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C_r1 =	0.00584 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00507 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00489 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00432 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00431 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00346 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00336 (mg/L)
	concentration in Colby Lake	C_cl =	0.00226 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case	Year 10		
Parameter	Boron		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0450 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0450 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0450 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0450 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0450 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0450 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0450 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0450 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0450 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0960 (mg/L)
	concentration of West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0870 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0870 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0870 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0870 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0870 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0870 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0870 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0870 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	0.7600 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	0.7600 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.7600 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.7600 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.7600 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0622 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	0.0370 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	0.7600 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C gC3s =	0.7600 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.7600 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.7600 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.7600 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0622 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0870 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0870 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0870 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	0.8800 (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M s1 =	(mg/s)
	mass flux of ground water into SW-001	M g1 =	0.44318 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	2.71680 (mg/s)
	mass flux of surface water into SW-002	M s2 =	(mg/s)
	mass flux of ground water into SW-002	M g2 =	0.76175 (mg/s)
	mass flux of surface water into SW-003	M s3 =	(mg/s)
	mass flux of ground water into SW-003	M g3 =	0.25773 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M gC3_003 =	0.00042 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00008 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	(mg/s)
	mass flux of ground water into SW-004	M g4 =	0.76221 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00008 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00008 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00010 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.13461 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.03328 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00003 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00007 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00073 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M g4A =	3.40829 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.09313 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00002 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.05643 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	- (mg/s)
	mass flux of ground water into SW-005	M g5 =	5.58897 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	- (mg/s)
mass flux of ground water into USGS Gage	M g6 =	1.15719 (mg/s)	
mass flux of surface water into Colby Lake	M scl =	- (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	2.88066 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.49667 (mg/s)	
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M r1 =	3.1600 (mg/s)
	mass flux in river at SW-002	M r2 =	3.9217 (mg/s)
	mass flux in river at SW-003	M r3 =	4.1800 (mg/s)
	mass flux in river at SW-004	M r4 =	5.1112 (mg/s)
	mass flux in river at SW-004A	M r4A =	8.6690 (mg/s)
	mass flux in river at SW-005	M r5 =	14.2580 (mg/s)
	mass flux in river at USGS Gage	M r6 =	15.4152 (mg/s)
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C r1 =	0.09463 (mg/L)
	concentration in river at SW-002	C r2 =	0.09304 (mg/L)
	concentration in river at SW-003	C r3 =	0.09266 (mg/L)
	concentration in river at SW-004	C r4 =	0.09034 (mg/L)
	concentration in river at SW-004A	C r4A =	0.08901 (mg/L)
	concentration in river at SW-005	C r5 =	0.08821 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.08812 (mg/L)
	concentration in Colby Lake	C cl =	0.05095 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case		Year 10	
Parameter		Barium	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0077 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0077 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0077 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0077 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0077 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0077 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0077 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0077 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0077 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0050 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0219 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0219 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0219 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0219 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0219 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0219 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0219 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0219 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.1900 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.1900 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.1900 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.1900 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.1900 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0168 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0140 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.1900 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.1900 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.1900 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.1900 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.1900 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0168 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0219 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0219 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0219 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.2300 (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.11166 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.14150 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.19193 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.06494 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00011 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00002 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.19204 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00002 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00002 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00002 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.03643 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00901 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00001 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00002 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00019 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.85873 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.02328 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.02135 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	1.40816 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.29156 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.72579 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.08476 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	0.2532 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.4461 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.5101 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.7479 (mg/s)
	mass flux in river at SW-004A	M_r4A =	1.6513 (mg/s)
	mass flux in river at SW-005	M_r5 =	3.0594 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	3.3510 (mg/s)
	mass flux into Colby Lake	M_cl =	4.1616 (mg/s)
	Low Flow		
	concentration in river at SW-001	C_r1 =	0.00758 (mg/L)
	concentration in river at SW-002	C_r2 =	0.01056 (mg/L)
	concentration in river at SW-003	C_r3 =	0.01131 (mg/L)
	concentration in river at SW-004	C_r4 =	0.01322 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.01695 (mg/L)
	concentration in river at SW-005	C_r5 =	0.01893 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.01916 (mg/L)
	concentration in Colby Lake	C_cl =	0.00933 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case		Year 10	
Parameter		Beryllium	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0001 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0001 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0001 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0001 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0001 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0001 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0001 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0001 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0001 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0001 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0001 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0001 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0001 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0001 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0001 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0001 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0001 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0001 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.0023 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0023 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0023 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0023 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	- (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.0023 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0023 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0023 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0023 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	- (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0001 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0001 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0001 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0027 (mg/L)
		Low Flow	
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00074 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.00283 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.00127 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00043 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.00127 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	- (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00000 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.00568 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.00002 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.00931 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.00193 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.00480 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00110 (mg/s)
		Low Flow	
Mass balance at each node	mass flux in river at SW-001	M_r1 =	0.0036 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.0048 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.0053 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.0065 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.0122 (mg/s)
	mass flux in river at SW-005	M_r5 =	0.0216 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	0.0235 (mg/s)
	mass flux into Colby Lake	M_cl =	0.0294 (mg/s)
		Low Flow	
Convert mass flux to concentration	concentration in river at SW-001	C_r1 =	0.00011 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00011 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00012 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00012 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00013 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00013 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00013 (mg/L)
	concentration in Colby Lake	C_cl =	0.00010 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case		Year 10	
Parameter		Calcium	
Input concentration data	concentration of surface water into SW-001	C_s1 =	17.0000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	17.0000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	17.0000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	17.0000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	17.0000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	17.0000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	17.0000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	17.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	17.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	24.5000 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	14.7900 (mg/L)
	concentration of ground water into SW-002	C_g2 =	14.7900 (mg/L)
	concentration of ground water into SW-003	C_g3 =	14.7900 (mg/L)
	concentration of ground water into SW-004	C_g4 =	14.7900 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	14.7900 (mg/L)
	concentration of ground water into SW-005	C_g5 =	14.7900 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	14.7900 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	14.7900 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	540.0000 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	480.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	480.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	480.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	216.1238 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	9.3700 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	15.8000 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	540.0000 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	480.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	480.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	480.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	216.1238 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	9.3700 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	14.7900 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	14.7900 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	14.7900 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	375.0000 (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	75.34026 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	693.35000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	129.49691 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	43.81436 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.26569 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.04851 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00025 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	129.57641 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.04851 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.04755 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.02844 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	20.27794 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00047 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00022 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00020 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	5.01400 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00563 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.01206 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.31239 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	579.40885 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	66.17271 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.01183 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	24.09885 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	950.12439 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	196.72179 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	489.71169 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	187.62900 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	768.6903 (mg/s)
	mass flux in river at SW-002	M_r2 =	898.1872 (mg/s)
	mass flux in river at SW-003	M_r3 =	942.3160 (mg/s)
	mass flux in river at SW-004	M_r4 =	1,097.6400 (mg/s)
	mass flux in river at SW-004A	M_r4A =	1,767.3323 (mg/s)
	mass flux in river at SW-005	M_r5 =	2,717.4567 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	2,914.1785 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	3,591.5192 (mg/s)
	Low Flow		
	concentration in river at SW-001	C_r1 =	23.01881 (mg/L)
	concentration in river at SW-002	C_r2 =	21.30945 (mg/L)
	concentration in river at SW-003	C_r3 =	20.88800 (mg/L)
	concentration in river at SW-004	C_r4 =	19.40134 (mg/L)
	concentration in river at SW-004A	C_r4A =	18.14528 (mg/L)
	concentration in river at SW-005	C_r5 =	16.81178 (mg/L)
	concentration in river at USGS Gage	C_r6 =	16.65806 (mg/L)
	concentration in Colby Lake	C_cl =	16.91131 (mg/L)



**Partridge River Mass-Balance Model - Mine Site - Proposed Action**

Case		Year 10	
Parameter		Cadmium	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0001 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0001 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0001 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0001 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0001 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0001 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0001 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0001 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0001 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0001 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0001 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0001 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0001 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0001 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0001 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0001 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0001 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0001 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.0149 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0149 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0149 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0149 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0001 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.0149 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0149 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0149 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0149 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0001 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0001 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0001 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0001 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0100 (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00051 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.00283 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.00088 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00030 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.00088 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00013 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00003 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00001 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.00392 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.00002 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.00642 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.00133 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.00331 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00110 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	0.0033 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.0042 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.0045 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.0056 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.0095 (mg/s)
	mass flux in river at SW-005	M_r5 =	0.0159 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	0.0173 (mg/s)
	mass flux into Colby Lake	M_cl =	0.0217 (mg/s)
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C_r1 =	0.00010 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00010 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00010 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00010 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00010 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00010 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00010 (mg/L)
	concentration in Colby Lake	C_cl =	0.00010 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case		Year 10	
Parameter		Chloride	
Input concentration data	concentration of surface water into SW-001	C_s1 =	8.0000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	8.0000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	8.0000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	8.0000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	8.0000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	8.0000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	8.0000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	8.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	8.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	1.6000 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	6.6000 (mg/L)
	concentration of ground water into SW-002	C_g2 =	6.6000 (mg/L)
	concentration of ground water into SW-003	C_g3 =	6.6000 (mg/L)
	concentration of ground water into SW-004	C_g4 =	6.6000 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	6.6000 (mg/L)
	concentration of ground water into SW-005	C_g5 =	6.6000 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	6.6000 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	6.6000 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	24.9451 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	6.6896 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	13.9749 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	8.2312 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	2.0542 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	5.3500 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	2.3300 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	24.9451 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	6.6896 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	13.9749 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	8.2312 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	2.0542 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	5.3500 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	6.6000 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	6.6000 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	6.6000 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	27.1000 (mg/L)
Low Flow			
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	33.62040 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	45.28000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	57.78767 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	19.55205 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00370 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00141 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	57.82314 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00141 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00082 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00027 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	11.57812 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	2.86285 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00251 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00538 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.02258 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	258.55973 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	3.05683 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00055 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	3.55382 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	423.99060 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	87.78660 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	218.53260 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	88.29600 (mg/s)
Low Flow			
Mass balance at each node	mass flux in river at SW-001	M_r1 =	78.9004 (mg/s)
	mass flux in river at SW-002	M_r2 =	136.6881 (mg/s)
	mass flux in river at SW-003	M_r3 =	156.2452 (mg/s)
	mass flux in river at SW-004	M_r4 =	228.5423 (mg/s)
	mass flux in river at SW-004A	M_r4A =	493.7133 (mg/s)
	mass flux in river at SW-005	M_r5 =	917.7039 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	1,005.4905 (mg/s)
	mass flux into Colby Lake	M_cl =	1,312.3191 (mg/s)
Low Flow			
Convert mass flux to concentration	concentration in river at SW-001	C_r1 =	2.36271 (mg/L)
	concentration in river at SW-002	C_r2 =	3.24292 (mg/L)
	concentration in river at SW-003	C_r3 =	3.46344 (mg/L)
	concentration in river at SW-004	C_r4 =	4.03960 (mg/L)
	concentration in river at SW-004A	C_r4A =	5.06898 (mg/L)
	concentration in river at SW-005	C_r5 =	5.67745 (mg/L)
	concentration in river at USGS Gage	C_r6 =	5.74760 (mg/L)
	concentration in Colby Lake	C_cl =	7.70612 (mg/L)

**Partridge River Mass-Balance Model - Mine Site - Proposed Action**

Case		Year 10	
Parameter		Cobalt	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0005 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0005 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0005 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0005 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0005 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0005 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0005 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0005 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0005 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0005 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0017 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0017 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0017 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0017 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0017 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0017 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0017 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0017 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0357 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	44.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	44.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	37.7159 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	7.6078 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0011 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0013 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0357 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	44.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	44.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	37.7159 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	7.6078 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0011 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0017 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0017 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0017 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	10.9000 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00841 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.01415 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.01445 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00489 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.02435 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00445 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00002 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.01446 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00445 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00374 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00100 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00240 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00004 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00002 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00001 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00059 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00908 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.06464 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.00438 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.00198 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.10600 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.02195 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.05463 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00552 (mg/s)
Mass balance at each node	mass flux in river at SW-001	M_r1 =	0.0228 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.0370 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.0707 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.1065 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.1775 (mg/s)
	mass flux in river at SW-005	M_r5 =	0.2835 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	0.3055 (mg/s)
	mass flux into Colby Lake	M_cl =	0.3656 (mg/s)
Convert mass flux to concentration	concentration in river at SW-001	C_r1 =	0.00068 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00088 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00157 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00188 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00182 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00175 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00175 (mg/L)
	concentration in Colby Lake	C_cl =	0.00067 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case	Year 10		
Parameter	Copper		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0017 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0017 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0017 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0017 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0017 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0017 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0017 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0017 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0190 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0012 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0030 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0030 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0030 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0030 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0030 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0030 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0030 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0030 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 1/2 stockpile	C_gC12 =	0.0920 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	202.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	202.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	6.8075 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	1.3732 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0214 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0170 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0920 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	202.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	202.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	6.8075 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	1.3732 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0214 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0030 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0030 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0030 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	11.4000 (mg/L)
Low Flow	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.01503 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.03509 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.02583 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00874 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.11181 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.02041 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00011 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.02585 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.02041 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00067 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00018 (mg/s)
	Convert concentration to mass flux	mass flux of seepage from Overburden (Storage)	M_gOS =
mass flux of liner leakage from Cat 3LO sumps to SW-004		M_gC3LOs_004 =	0.00020 (mg/s)
mass flux of liner leakage from Cat 4 sumps		M_gC4s =	0.00000 (mg/s)
mass flux of liner leakage from LOSP sumps		M_gC4LOs =	0.00000 (mg/s)
mass flux of seepage from Overburden Ponds - PW1		M_gOp1 =	0.01147 (mg/s)
mass flux of leakage from Haul Road Pond - PW2		M_gHRp2 =	0.00000 (mg/s)
mass flux of leakage from Haul Road Pond - PW4		M_gHRp4 =	0.00000 (mg/s)
mass flux of leakage from RTH Pond - PW3		M_gRTHp =	0.00000 (mg/s)
mass flux of liner leakage from WWTF pond		M_gWTFp =	0.00950 (mg/s)
mass flux of surface water into SW-004A		M_s4A =	- (mg/s)
mass flux of ground water into SW-004A		M_g4A =	0.11557 (mg/s)
mass flux of West Pit overflow		M_sms =	#N/A (mg/s)
mass flux of liner leakage from Cat 1/2 stockpile		M_gC12 =	0.01127 (mg/s)
mass flux of liner leakage from Cat 1/2 sumps		M_gC12s =	0.00000 (mg/s)
mass flux of seepage from Overburden (Cat 1/2)		M_gO12 =	0.02593 (mg/s)
mass flux of seepage from Overburden Pond - PW7		M_gOp7 =	#N/A (mg/s)
mass flux of surface water into SW-005		M_s5 =	- (mg/s)
mass flux of ground water into SW-005		M_g5 =	0.18951 (mg/s)
mass flux of surface water into USGS Gage		M_s6 =	- (mg/s)
mass flux of ground water into USGS Gage		M_g6 =	0.03924 (mg/s)
mass flux of surface water into Colby Lake	M_scl =	- (mg/s)	
mass flux of ground water into Colby Lake	M_gcl =	0.09768 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.20970 (mg/s)	
Low Flow	mass flux in river at SW-001	M_r1 =	0.0501 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.0759 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.2170 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.3318 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.4846 (mg/s)
	mass flux in river at SW-005	M_r5 =	0.6741 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	0.7133 (mg/s)
	mass flux into Colby Lake	M_cl =	1.0207 (mg/s)
Low Flow	concentration in river at SW-001	C_r1 =	0.00150 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00180 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00481 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00586 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00498 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00417 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00408 (mg/L)
	concentration in Colby Lake	C_cl =	0.00213 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case	Year 10			
Parameter	Fluoride			
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0700 (mg/L)	
	concentration of surface water into SW-002	C_s2 =	0.0700 (mg/L)	
	concentration of surface water into SW-003	C_s3 =	0.0700 (mg/L)	
	concentration of surface water into SW-004	C_s4 =	0.0700 (mg/L)	
	concentration of surface water into SW-004A	C_s4A =	0.0700 (mg/L)	
	concentration of surface water into SW-005	C_s5 =	0.0700 (mg/L)	
	concentration of surface water into USGS Gage	C_s6 =	0.0700 (mg/L)	
	concentration of surface water into Colby Lake	C_scl =	0.0700 (mg/L)	
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0700 (mg/L)	
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.1400 (mg/L)	
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)	
	concentration of ground water into SW-001	C_g1 =	0.2800 (mg/L)	
	concentration of ground water into SW-002	C_g2 =	0.2800 (mg/L)	
	concentration of ground water into SW-003	C_g3 =	0.2800 (mg/L)	
	concentration of ground water into SW-004	C_g4 =	0.2800 (mg/L)	
	concentration of ground water into SW-004A	C_g4A =	0.2800 (mg/L)	
	concentration of ground water into SW-005	C_g5 =	0.2800 (mg/L)	
	concentration of ground water into USGS Gage	C_g6 =	0.2800 (mg/L)	
	concentration of ground water into Colby Lake	C_gcl =	0.2800 (mg/L)	
	concentration of ground water seepage from East Pit	C_ggp =	#N/A (mg/L)	
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)	
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0621 (mg/L)	
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.0622 (mg/L)	
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0622 (mg/L)	
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0622 (mg/L)	
	concentration of liner leakage from LOSP	C_gC4LO =	0.0627 (mg/L)	
	concentration of seepage from Overburden (Storage)	C_gOS =	0.2239 (mg/L)	
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.4200 (mg/L)	
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0621 (mg/L)	
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.0622 (mg/L)	
	concentration of liner leakage from Cat 3LO sumps	C_g3LOs =	0.0622 (mg/L)	
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0622 (mg/L)	
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0627 (mg/L)	
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.2239 (mg/L)	
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)	
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.2800 (mg/L)	
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.2800 (mg/L)	
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.2800 (mg/L)	
	concentration of liner leakage from WWTF ponc	C_gWTFp =	17.9000 (mg/L)	
	Convert concentration to mass flux	Low Flow		
		mass flux of surface water into SW-001	M_s1 =	(mg/s)
		mass flux of ground water into SW-001	M_g1 =	1.42632 (mg/s)
		mass flux of surface discharges from upstream of PM-1	M_sns =	3.96200 (mg/s)
mass flux of surface water into SW-002		M_s2 =	(mg/s)	
mass flux of ground water into SW-002		M_g2 =	2.45160 (mg/s)	
mass flux of surface water into SW-003		M_s3 =	(mg/s)	
mass flux of ground water into SW-003		M_g3 =	0.82948 (mg/s)	
mass flux of seepage from East Pit to SW-003		M_ggp_003 =	#N/A (mg/s)	
mass flux of liner leakage from Cat 3 stockpile to SW-003		M_gC3_003 =	0.00003 (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-003		M_gC3LO_00 =	0.00001 (mg/s)	
mass flux of liner leakage from Cat 3 sumps to SW-003		M_gC3s_003 =	0.00000 (mg/s)	
mass flux of surface water into SW-004		M_s4 =	(mg/s)	
mass flux of ground water into SW-004		M_g4 =	2.45310 (mg/s)	
mass flux of seepage from East Pit to SW-004		M_ggp_004 =	#N/A (mg/s)	
mass flux of seepage from West Pit		M_gwp =	#N/A (mg/s)	
mass flux of liner leakage from Cat 3 stockpile to SW-004		M_gC3_004 =	- (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-004		M_gC3LO_00 =	0.00001 (mg/s)	
mass flux of liner leakage from Cat 4 stockpile		M_gC4 =	0.00001 (mg/s)	
mass flux of liner leakage from LOSP		M_gC4LO =	0.00001 (mg/s)	
mass flux of seepage from Overburden (Storage)		M_gOS =	0.48453 (mg/s)	
mass flux of liner leakage from Cat 3LO sumps to SW-004		M_gC3LOs_0 =	0.00000 (mg/s)	
mass flux of liner leakage from Cat 4 sumps		M_gC4s =	0.00000 (mg/s)	
mass flux of liner leakage from LOSP sumps		M_gC4LOs =	0.00000 (mg/s)	
mass flux of seepage from Overburden Ponds - PW1		M_gOp1 =	0.11981 (mg/s)	
mass flux of leakage from Haul Road Pond - PW2		M_gHRp2 =	0.00011 (mg/s)	
mass flux of leakage from Haul Road Pond - PW4		M_gHRp4 =	0.00023 (mg/s)	
mass flux of leakage from RTH Pond - PW3		M_gRTHp =	0.00000 (mg/s)	
mass flux of liner leakage from WWTF pond		M_gWTFp =	0.01491 (mg/s)	
mass flux of surface water into SW-004A		M_s4A =	- (mg/s)	
mass flux of ground water into SW-004A		M_g4A =	10.96920 (mg/s)	
mass flux of West Pit overflow		M_sms =	#N/A (mg/s)	
mass flux of liner leakage from Cat 1/2 stockpile		M_gC12 =	0.00761 (mg/s)	
mass flux of liner leakage from Cat 1/2 sumps		M_gC12s =	0.00000 (mg/s)	
mass flux of seepage from Overburden (Cat 1/2)		M_gO12 =	0.64060 (mg/s)	
mass flux of seepage from Overburden Pond - PW7		M_gOp7 =	#N/A (mg/s)	
mass flux of surface water into SW-005		M_s5 =	- (mg/s)	
mass flux of ground water into SW-005		M_g5 =	17.98748 (mg/s)	
mass flux of surface water into USGS Gage		M_s6 =	- (mg/s)	
mass flux of ground water into USGS Gage		M_g6 =	3.72428 (mg/s)	
mass flux of surface water into Colby Lake		M_scl =	- (mg/s)	
mass flux of ground water into Colby Lake		M_gcl =	9.27108 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP		M_shl =	0.77259 (mg/s)	
Mass balance at each node	Low Flow			
	mass flux in river at SW-001	M_r1 =	5.3883 (mg/s)	
	mass flux in river at SW-002	M_r2 =	7.8399 (mg/s)	
	mass flux in river at SW-003	M_r3 =	8.6694 (mg/s)	
	mass flux in river at SW-004	M_r4 =	11.7421 (mg/s)	
	mass flux in river at SW-004A	M_r4A =	23.3596 (mg/s)	
	mass flux in river at SW-005	M_r5 =	41.3470 (mg/s)	
	mass flux in river at USGS Gage	M_r6 =	45.0713 (mg/s)	
	mass flux into Colby Lake	M_cl =	55.1150 (mg/s)	
Convert mass flux to concentration	Low Flow			
	concentration in river at SW-001	C_r1 =	0.16136 (mg/L)	
	concentration in river at SW-002	C_r2 =	0.18600 (mg/L)	
	concentration in river at SW-003	C_r3 =	0.19217 (mg/L)	
	concentration in river at SW-004	C_r4 =	0.20755 (mg/L)	
	concentration in river at SW-004A	C_r4A =	0.23983 (mg/L)	
	concentration in river at SW-005	C_r5 =	0.25580 (mg/L)	
	concentration in river at USGS Gage	C_r6 =	0.25764 (mg/L)	
	concentration in Colby Lake	C_cl =	0.09653 (mg/L)	

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case	Year 10		
Parameter	Iron		
Input concentration data	concentration of surface water into SW-001	C_s1 =	1.6000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	1.6000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	1.6000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	1.6000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	1.6000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	1.6000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	1.6000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	1.6000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	1.6000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0300 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	2.8440 (mg/L)
	concentration of ground water into SW-002	C_g2 =	2.8440 (mg/L)
	concentration of ground water into SW-003	C_g3 =	2.8440 (mg/L)
	concentration of ground water into SW-004	C_g4 =	2.8440 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	2.8440 (mg/L)
	concentration of ground water into SW-005	C_g5 =	2.8440 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	2.8440 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	2.8440 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.8100 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	147.6893 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	235.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	235.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	235.0000 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.2255 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.1500 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.8100 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	147.6893 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	235.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	235.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	235.0000 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.2255 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	2.8440 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	2.8440 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	2.8440 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	82.4000 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	14.48734 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.84900 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	24.90123 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	8.42516 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.08175 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.02375 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00008 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	24.91652 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.02375 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.02328 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.03092 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.48801 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00023 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00011 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00021 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.12067 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00108 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00232 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.06864 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	111.41574 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.09926 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00002 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.22879 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	182.70140 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	37.82804 (mg/s)
mass flux of surface water into Colby Lake	M_scl =	- (mg/s)	
mass flux of ground water into Colby Lake	M_gcl =	94.16768 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M_shl =	17.65920 (mg/s)	
Mass balance at each node	mass flux in river at SW-001	M_r1 =	15.3363 (mg/s)
	mass flux in river at SW-002	M_r2 =	40.2376 (mg/s)
	mass flux in river at SW-003	M_r3 =	48.7683 (mg/s)
	mass flux in river at SW-004	M_r4 =	74.4441 (mg/s)
	mass flux in river at SW-004A	M_r4A =	186.1879 (mg/s)
	mass flux in river at SW-005	M_r5 =	368.8893 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	406.7174 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	518.5443 (mg/s)
	concentration in river at SW-001	C_r1 =	0.45925 (mg/L)
	concentration in river at SW-002	C_r2 =	0.95463 (mg/L)
	concentration in river at SW-003	C_r3 =	1.08103 (mg/L)
	concentration in river at SW-004	C_r4 =	1.31584 (mg/L)
	concentration in river at SW-004A	C_r4A =	1.91160 (mg/L)
	concentration in river at SW-005	C_r5 =	2.28217 (mg/L)
	concentration in river at USGS Gage	C_r6 =	2.32488 (mg/L)
	concentration in Colby Lake	C_cl =	1.71171 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case	Year 10		
Parameter	Hardness		
Input concentration data	concentration of surface water into SW-001	C_s1 =	110.0000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	110.0000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	110.0000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	110.0000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	110.0000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	110.0000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	110.0000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	110.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	110.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	110.0000 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	66.4200 (mg/L)
	concentration of ground water into SW-002	C_g2 =	66.4200 (mg/L)
	concentration of ground water into SW-003	C_g3 =	66.4200 (mg/L)
	concentration of ground water into SW-004	C_g4 =	66.4200 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	66.4200 (mg/L)
	concentration of ground water into SW-005	C_g5 =	66.4200 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	66.4200 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	66.4200 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	1,729.3495 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	5,435.6906 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	5,435.6906 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	5,435.6906 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	1,547.4738 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	43.5200 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	71.5000 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	1,729.3495 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	5,435.6906 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_g3LOs =	5,435.6906 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	5,435.6906 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	1,547.4738 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	43.5200 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	66.4200 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	66.4200 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	66.4200 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	2,740.0000 (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	338.34348 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	3,113.00000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	581.55406 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	196.76471 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	3.00875 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.54932 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00286 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	581.91110 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.54932 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.53851 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.20360 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	94.18314 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00534 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00248 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00141 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	23.28806 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.02527 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.05414 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00002 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	2.28253 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	2,602.05112 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	211.91803 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.03789 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	109.05493 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	4,266.88722 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
mass flux of ground water into USGS Gage	M_g6 =	883.45242 (mg/s)	
mass flux of surface water into Colby Lake	M_scl =	- (mg/s)	
mass flux of ground water into Colby Lake	M_gcl =	2,199.23262 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M_shl =	1,214.07000 (mg/s)	
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	3,451.3435 (mg/s)
	mass flux in river at SW-002	M_r2 =	4,032.8975 (mg/s)
	mass flux in river at SW-003	M_r3 =	4,233.2232 (mg/s)
	mass flux in river at SW-004	M_r4 =	4,936.2710 (mg/s)
	mass flux in river at SW-004A	M_r4A =	7,859.3329 (mg/s)
	mass flux in river at SW-005	M_r5 =	12,126.2202 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	13,009.6726 (mg/s)
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C_r1 =	103.35220 (mg/L)
	concentration in river at SW-002	C_r2 =	95.68032 (mg/L)
	concentration in river at SW-003	C_r3 =	93.83642 (mg/L)
	concentration in river at SW-004	C_r4 =	87.25106 (mg/L)
	concentration in river at SW-004A	C_r4A =	80.69212 (mg/L)
	concentration in river at SW-005	C_r5 =	75.01992 (mg/L)
	concentration in river at USGS Gage	C_r6 =	74.36605 (mg/L)
	concentration in Colby Lake	C_cl =	104.88387 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case		Year 10	
Parameter		Potassium	
Input concentration data	concentration of surface water into SW-001	C_s1 =	1.3000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	1.3000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	1.3000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	1.3000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	1.3000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	1.3000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	1.3000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	1.3000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	1.3000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	2.7000 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	1.7500 (mg/L)
	concentration of ground water into SW-002	C_g2 =	1.7500 (mg/L)
	concentration of ground water into SW-003	C_g3 =	1.7500 (mg/L)
	concentration of ground water into SW-004	C_g4 =	1.7500 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	1.7500 (mg/L)
	concentration of ground water into SW-005	C_g5 =	1.7500 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	1.7500 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	1.7500 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	49.0000 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	38.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	38.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	38.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	38.0000 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	2.2600 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	4.4500 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	49.0000 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	38.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	38.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	38.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	38.0000 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	2.2600 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	1.7500 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	1.7500 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	1.7500 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	36.1000 (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	8.91450 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	76.41000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	15.32249 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	5.18426 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.02103 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00384 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00002 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	15.33189 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00384 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00376 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00500 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	4.89094 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00004 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00002 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00003 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	1.20935 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00067 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00143 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.03007 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	68.55750 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	6.00456 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00107 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	6.78734 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	112.42175 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	23.27675 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	57.94425 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	14.34810 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	85.3245 (mg/s)
	mass flux in river at SW-002	M_r2 =	100.6470 (mg/s)
	mass flux in river at SW-003	M_r3 =	105.8561 (mg/s)
	mass flux in river at SW-004	M_r4 =	127.3332 (mg/s)
	mass flux in river at SW-004A	M_r4A =	208.6837 (mg/s)
	mass flux in river at SW-005	M_r5 =	321.1054 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	344.3822 (mg/s)
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C_r1 =	2.55508 (mg/L)
	concentration in river at SW-002	C_r2 =	2.38785 (mg/L)
	concentration in river at SW-003	C_r3 =	2.34648 (mg/L)
	concentration in river at SW-004	C_r4 =	2.25068 (mg/L)
	concentration in river at SW-004A	C_r4A =	2.14256 (mg/L)
	concentration in river at SW-005	C_r5 =	1.98655 (mg/L)
	concentration in river at USGS Gage	C_r6 =	1.96856 (mg/L)
	concentration in Colby Lake	C_cl =	1.38815 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case		Year 10	
Parameter		Magnesium	
Input concentration data	concentration of surface water into SW-001	C_s1 =	8.0000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	8.0000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	8.0000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	8.0000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	8.0000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	8.0000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	8.0000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	8.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	8.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	10.5000 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	8.0200 (mg/L)
	concentration of ground water into SW-002	C_g2 =	8.0200 (mg/L)
	concentration of ground water into SW-003	C_g3 =	8.0200 (mg/L)
	concentration of ground water into SW-004	C_g4 =	8.0200 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	8.0200 (mg/L)
	concentration of ground water into SW-005	C_g5 =	8.0200 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	8.0200 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	8.0200 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	93.0000 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	1,030.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	1,030.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	1,030.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	245.0684 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	4.8800 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	9.0100 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	93.0000 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	1,030.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	1,030.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	1,030.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	245.0684 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	4.8800 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	8.0200 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	8.0200 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	8.0200 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	438.0000 (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	40.85388 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	297.15000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	70.22077 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	23.75870 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.57012 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.10409 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00054 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	70.26388 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.10409 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.10204 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.03224 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	10.56098 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00101 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00047 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00022 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	2.61135 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00305 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00654 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.36487 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	314.18925 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	11.39641 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00204 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	13.74245 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	515.21282 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	106.67402 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	265.55022 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	88.29600 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	338.0039 (mg/s)
	mass flux in river at SW-002	M_r2 =	408.2247 (mg/s)
	mass flux in river at SW-003	M_r3 =	432.6581 (mg/s)
	mass flux in river at SW-004	M_r4 =	516.7094 (mg/s)
	mass flux in river at SW-004A	M_r4A =	856.0395 (mg/s)
	mass flux in river at SW-005	M_r5 =	1,371.2524 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	1,477.9264 (mg/s)
	mass flux into Colby Lake	M_cl =	1,831.7726 (mg/s)
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C_r1 =	10.12169 (mg/L)
	concentration in river at SW-002	C_r2 =	9.68511 (mg/L)
	concentration in river at SW-003	C_r3 =	9.59059 (mg/L)
	concentration in river at SW-004	C_r4 =	9.13310 (mg/L)
	concentration in river at SW-004A	C_r4A =	8.78900 (mg/L)
	concentration in river at SW-005	C_r5 =	8.48337 (mg/L)
	concentration in river at USGS Gage	C_r6 =	8.44814 (mg/L)
	concentration in Colby Lake	C_cl =	8.05276 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case		Year 10	
Parameter		Manganese	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.1500 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.1500 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.1500 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.1500 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.1500 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.1500 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.1500 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.1500 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.1500 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0086 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.1240 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.1240 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.1240 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.1240 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.1240 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.1240 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.1240 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.1240 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.7500 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	47.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	47.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	47.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	17.2018 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.1604 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.1160 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.7500 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	47.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	47.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	47.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	17.2018 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.1604 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.1240 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.1240 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.1240 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	20.1000 (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.63166 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.24338 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	1.08571 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.36734 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.02602 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00475 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00002 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	1.08637 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00475 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00466 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00226 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.34711 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00005 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00002 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00002 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.08583 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00005 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00010 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.01674 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	4.85779 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.09191 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00002 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.17693 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	7.96588 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	1.64932 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	4.10576 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	1.65555 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	0.8750 (mg/s)
	mass flux in river at SW-002	M_r2 =	1.9607 (mg/s)
	mass flux in river at SW-003	M_r3 =	2.3589 (mg/s)
	mass flux in river at SW-004	M_r4 =	3.9069 (mg/s)
	mass flux in river at SW-004A	M_r4A =	9.0335 (mg/s)
	mass flux in river at SW-005	M_r5 =	16.9994 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	18.6487 (mg/s)
	mass flux into Colby Lake	M_cl =	24.4100 (mg/s)
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C_r1 =	0.02620 (mg/L)
	concentration in river at SW-002	C_r2 =	0.04652 (mg/L)
	concentration in river at SW-003	C_r3 =	0.05229 (mg/L)
	concentration in river at SW-004	C_r4 =	0.06906 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.09275 (mg/L)
	concentration in river at SW-005	C_r5 =	0.10517 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.10660 (mg/L)
	concentration in Colby Lake	C_cl =	0.14437 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case	Year 10		
Parameter	Sodium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	2.5000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	2.5000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	2.5000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	2.5000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	2.5000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	2.5000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	2.5000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	2.5000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	2.5000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	4.8000 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	13.3300 (mg/L)
	concentration of ground water into SW-002	C_g2 =	13.3300 (mg/L)
	concentration of ground water into SW-003	C_g3 =	13.3300 (mg/L)
	concentration of ground water into SW-004	C_g4 =	13.3300 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	13.3300 (mg/L)
	concentration of ground water into SW-005	C_g5 =	13.3300 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	13.3300 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	13.3300 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	582.9146 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	338.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	338.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	338.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	92.6020 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	4.6000 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	7.1900 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	582.9146 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	338.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_g3LOs =	338.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	338.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	92.6020 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	4.6000 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	13.3300 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	13.3300 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	13.3300 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	255.0000 (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	67.90302 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	135.84000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	116.71358 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	39.48921 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.18709 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.03416 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00018 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	116.78523 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.03416 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.03349 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.01218 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	9.95502 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00033 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00015 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00008 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	2.46151 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00507 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.01087 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.21242 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	522.21231 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	71.43155 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.01277 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	10.96650 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	856.33253 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	177.30233 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	441.36963 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	27.59250 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	203.7430 (mg/s)
	mass flux in river at SW-002	M_r2 =	320.4566 (mg/s)
	mass flux in river at SW-003	M_r3 =	360.1672 (mg/s)
	mass flux in river at SW-004	M_r4 =	489.6779 (mg/s)
	mass flux in river at SW-004A	M_r4A =	1,094.3011 (mg/s)
	mass flux in river at SW-005	M_r5 =	1,950.6336 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	2,127.9359 (mg/s)
	mass flux into Colby Lake	M_cl =	2,596.8981 (mg/s)
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C_r1 =	6.10119 (mg/L)
	concentration in river at SW-002	C_r2 =	7.60282 (mg/L)
	concentration in river at SW-003	C_r3 =	7.98371 (mg/L)
	concentration in river at SW-004	C_r4 =	8.65530 (mg/L)
	concentration in river at SW-004A	C_r4A =	11.23524 (mg/L)
	concentration in river at SW-005	C_r5 =	12.06776 (mg/L)
	concentration in river at USGS Gage	C_r6 =	12.16373 (mg/L)
	concentration in Colby Lake	C_cl =	3.86503 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case		Year 10	
Parameter		Nickel	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0016 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0016 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0016 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0016 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0016 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0016 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0016 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0016 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0033 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0016 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0163 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0163 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0163 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0163 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0163 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0163 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0163 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0163 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.2315 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	762.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	762.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	460.9037 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	92.9703 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0080 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0190 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.2315 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	762.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	762.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	460.9037 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	92.9703 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0080 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0163 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0163 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0163 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	138.0000 (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.08293 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.04387 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.14254 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.04823 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.42178 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.07701 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00040 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.14263 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.07701 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.04566 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.01223 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.01725 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00075 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00021 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00008 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00426 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00001 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00001 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.11496 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.63778 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.02836 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.02898 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	1.04584 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.21654 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.53905 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.03642 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	0.1268 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.2693 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.8168 (mg/s)
	mass flux in river at SW-004	M_r4 =	1.2322 (mg/s)
	mass flux in river at SW-004A	M_r4A =	1.9273 (mg/s)
	mass flux in river at SW-005	M_r5 =	2.9732 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	3.1897 (mg/s)
	mass flux into Colby Lake	M_cl =	3.7652 (mg/s)
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C_r1 =	0.00380 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00639 (mg/L)
	concentration in river at SW-003	C_r3 =	0.01810 (mg/L)
	concentration in river at SW-004	C_r4 =	0.02178 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.01979 (mg/L)
	concentration in river at SW-005	C_r5 =	0.01839 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.01823 (mg/L)
	concentration in Colby Lake	C_cl =	0.00384 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case Parameter	Year 10 Lead		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0005 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0005 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0005 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0005 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0005 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0005 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0005 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0005 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0005 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0002 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0011 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0011 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0011 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0011 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0011 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0011 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0011 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0011 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0276 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.0528 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0528 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0528 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0528 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0007 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0276 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.0528 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0528 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0528 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0528 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0007 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0011 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0011 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0011 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0400 (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00571 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.00425 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.00981 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00332 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00003 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.00981 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00001 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00146 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00036 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00003 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.04388 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.00339 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.07195 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.01490 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.03708 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00552 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	0.0100 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.0198 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.0231 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.0348 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.0821 (mg/s)
	mass flux in river at SW-005	M_r5 =	0.1540 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	0.1689 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	0.2115 (mg/s)
	Low Flow		
	concentration in river at SW-001	C_r1 =	0.00030 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00047 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00051 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00061 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00084 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00095 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00097 (mg/L)
	concentration in Colby Lake	C_cl =	0.00057 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case	Year 10		
Parameter	Antimony		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0015 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0015 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0015 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0015 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0015 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0015 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0015 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0015 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0015 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0015 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0015 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0015 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0015 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0015 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0015 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0015 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0015 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0015 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0800 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.0800 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0800 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0800 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0390 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0003 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0004 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0800 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.0800 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0800 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0800 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0390 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0003 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0015 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0015 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0015 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0816 (mg/L)
Low Flow			
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	(mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00764 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.04245 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	(mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.01313 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	(mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00444 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00004 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	(mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.01314 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00001 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00065 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00016 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00007 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.05876 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.00980 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.00061 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.09636 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.01995 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.04967 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.01656 (mg/s)
Low Flow			
Mass balance at each node	mass flux in river at SW-001	M_r1 =	0.0501 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.0632 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.0677 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.0818 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.1509 (mg/s)
	mass flux in river at SW-005	M_r5 =	0.2473 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	0.2673 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	0.3335 (mg/s)
	concentration in river at SW-001	C_r1 =	0.00150 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00150 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00150 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00145 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00155 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00153 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00153 (mg/L)
	concentration in Colby Lake	C_cl =	0.00150 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case	Year 10		
Parameter	Selenium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0005 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0005 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0005 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0005 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0005 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0005 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0005 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0005 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0005 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0005 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0019 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0019 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0019 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0019 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0019 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0019 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0019 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0019 (mg/L)
	concentration of ground water seepage from East Pit	C_gwp =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0029 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.0029 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0029 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0029 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0029 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0004 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0019 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0029 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.0029 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0029 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0029 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0029 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0004 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0019 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0019 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0019 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0100 (mg/L)
	Convert concentration to mass flux	Low Flow	
mass flux of surface water into SW-001		M_s1 =	(mg/s)
mass flux of ground water into SW-001		M_g1 =	0.00973 (mg/s)
mass flux of surface discharges from upstream of PM-1		M_sns =	0.01415 (mg/s)
mass flux of surface water into SW-002		M_s2 =	(mg/s)
mass flux of ground water into SW-002		M_g2 =	0.01672 (mg/s)
mass flux of surface water into SW-003		M_s3 =	(mg/s)
mass flux of ground water into SW-003		M_g3 =	0.00566 (mg/s)
mass flux of seepage from East Pit to SW-003		M_gep_003 =	#N/A (mg/s)
mass flux of liner leakage from Cat 3 stockpile to SW-003		M_gC3_003 =	0.00000 (mg/s)
mass flux of liner leakage from Cat 3LO stockpile to SW-003		M_gC3LO_00 =	0.00000 (mg/s)
mass flux of liner leakage from Cat 3 sumps to SW-003		M_gC3s_003 =	0.00000 (mg/s)
mass flux of surface water into SW-004		M_s4 =	(mg/s)
mass flux of ground water into SW-004		M_g4 =	0.01673 (mg/s)
mass flux of seepage from East Pit to SW-004		M_gep_004 =	#N/A (mg/s)
mass flux of seepage from West Pit		M_gwp =	#N/A (mg/s)
mass flux of liner leakage from Cat 3 stockpile to SW-004		M_gC3_004 =	- (mg/s)
mass flux of liner leakage from Cat 3LO stockpile to SW-004		M_gC3LO_00 =	0.00000 (mg/s)
mass flux of liner leakage from Cat 4 stockpile		M_gC4 =	0.00000 (mg/s)
mass flux of liner leakage from LOSP		M_gC4LO =	0.00000 (mg/s)
mass flux of seepage from Overburden (Storage)		M_gOS =	0.00096 (mg/s)
mass flux of liner leakage from Cat 3LO sumps to SW-004		M_gC3LOs_0 =	0.00000 (mg/s)
mass flux of liner leakage from Cat 4 sumps		M_gC4s =	0.00000 (mg/s)
mass flux of liner leakage from LOSP sumps		M_gC4LOs =	0.00000 (mg/s)
mass flux of seepage from Overburden Ponds - PW1		M_gOp1 =	0.00024 (mg/s)
mass flux of leakage from Haul Road Pond - PW2		M_gHRp2 =	0.00000 (mg/s)
mass flux of leakage from Haul Road Pond - PW4		M_gHRp4 =	0.00000 (mg/s)
mass flux of leakage from RTH Pond - PW3		M_gRTHp =	0.00000 (mg/s)
mass flux of liner leakage from WWTF pond		M_gWTFp =	0.00001 (mg/s)
mass flux of surface water into SW-004A		M_s4A =	- (mg/s)
mass flux of ground water into SW-004A		M_g4A =	0.07483 (mg/s)
mass flux of West Pit overflow		M_sms =	#N/A (mg/s)
mass flux of liner leakage from Cat 1/2 stockpile		M_gC12 =	0.00036 (mg/s)
mass flux of liner leakage from Cat 1/2 sumps		M_gC12s =	0.00000 (mg/s)
mass flux of seepage from Overburden (Cat 1/2)		M_gO12 =	0.00290 (mg/s)
mass flux of seepage from Overburden Pond - PW7		M_gOp7 =	#N/A (mg/s)
mass flux of surface water into SW-005		M_s5 =	- (mg/s)
mass flux of ground water into SW-005		M_g5 =	0.12270 (mg/s)
mass flux of surface water into USGS Gage		M_s6 =	- (mg/s)
mass flux of ground water into USGS Gage		M_g6 =	0.02540 (mg/s)
mass flux of surface water into Colby Lake	M_scl =	- (mg/s)	
mass flux of ground water into Colby Lake	M_gcl =	0.06324 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00552 (mg/s)	
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	0.0239 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.0406 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.0463 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.0642 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.1423 (mg/s)
	mass flux in river at SW-005	M_r5 =	0.2650 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	0.2904 (mg/s)
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C_r1 =	0.00072 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00096 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00103 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00113 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00146 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00164 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00166 (mg/L)
concentration in Colby Lake	C_cl =	0.00067 (mg/L)	

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case		Year 10	
Parameter		sulfate	
Input concentration data	concentration of surface water into SW-001	C_s1 =	9.0000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	9.0000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	9.0000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	9.0000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	9.0000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	9.0000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	9.0000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	9.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	9.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	22.0000 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	16.1300 (mg/L)
	concentration of ground water into SW-002	C_g2 =	16.1300 (mg/L)
	concentration of ground water into SW-003	C_g3 =	16.1300 (mg/L)
	concentration of ground water into SW-004	C_g4 =	16.1300 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	16.1300 (mg/L)
	concentration of ground water into SW-005	C_g5 =	16.1300 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	16.1300 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	16.1300 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	1,288.6416 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	9,600.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	9,600.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	9,600.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	9,600.0000 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	35.1700 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	68.3000 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	1,288.6416 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	9,600.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	9,600.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	9,600.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	9,600.0000 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	35.1700 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	16.1300 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	16.1300 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	16.1300 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	5,026.0000 (mg/L)
Low Flow			
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	82.16622 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	622.60000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	141.22956 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	47.78402 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	5.31377 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.97015 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00505 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	141.31626 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.97015 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.95107 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	1.26309 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	76.11262 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00942 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00438 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00875 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	18.81988 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00614 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.01315 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	4.18685 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	631.90432 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	157.91278 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.02824 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	104.17415 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	1,036.20733 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	214.54513 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	534.08043 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	99.33300 (mg/s)
Low Flow			
Mass balance at each node	mass flux in river at SW-001	M_r1 =	704.7662 (mg/s)
	mass flux in river at SW-002	M_r2 =	845.9958 (mg/s)
	mass flux in river at SW-003	M_r3 =	900.0688 (mg/s)
	mass flux in river at SW-004	M_r4 =	1,143.7356 (mg/s)
	mass flux in river at SW-004A	M_r4A =	2,037.7551 (mg/s)
	mass flux in river at SW-005	M_r5 =	3,073.9624 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	3,288.5075 (mg/s)
	mass flux into Colby Lake	M_cl =	3,921.9210 (mg/s)
Low Flow			
Convert mass flux to concentration	concentration in river at SW-001	C_r1 =	21.10458 (mg/L)
	concentration in river at SW-002	C_r2 =	20.07121 (mg/L)
	concentration in river at SW-003	C_r3 =	19.95152 (mg/L)
	concentration in river at SW-004	C_r4 =	20.21610 (mg/L)
	concentration in river at SW-004A	C_r4A =	20.92172 (mg/L)
	concentration in river at SW-005	C_r5 =	19.01734 (mg/L)
	concentration in river at USGS Gage	C_r6 =	18.79781 (mg/L)
	concentration in Colby Lake	C_cl =	10.30509 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case	Year 10		
Parameter	Thallium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0004 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0004 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0004 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0004 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0004 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0004 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0004 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0004 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0004 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0003 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0000 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0000 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0000 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0000 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0000 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0000 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0000 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0000 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0000 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.0001 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0001 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0001 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0001 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0000 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0000 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.0001 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0001 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0001 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0001 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0000 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0000 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0000 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0000 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0072 (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M_s1 =	(mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00002 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.00809 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	(mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.00004 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	(mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00001 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	(mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.00004 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00009 (mg/s)
mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)	
mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)	
mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)	
mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00002 (mg/s)	
mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)	
mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)	
mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)	
mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00001 (mg/s)	
mass flux of surface water into SW-004A	M_s4A =	- (mg/s)	
mass flux of ground water into SW-004A	M_g4A =	0.00016 (mg/s)	
mass flux of West Pit overflow	M_sms =	#N/A (mg/s)	
mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.00000 (mg/s)	
mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)	
mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	- (mg/s)	
mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)	
mass flux of surface water into SW-005	M_s5 =	- (mg/s)	
mass flux of ground water into SW-005	M_g5 =	0.00026 (mg/s)	
mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)	
mass flux of ground water into USGS Gage	M_g6 =	0.00005 (mg/s)	
mass flux of surface water into Colby Lake	M_scl =	- (mg/s)	
mass flux of ground water into Colby Lake	M_gcl =	0.00013 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00441 (mg/s)	
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	0.0081 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.0081 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.0082 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.0083 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.0085 (mg/s)
	mass flux in river at SW-005	M_r5 =	0.0087 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	0.0088 (mg/s)
mass flux into Colby Lake	M_cl =	0.0133 (mg/s)	
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C_r1 =	0.00024 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00019 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00018 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00015 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00009 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00005 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00005 (mg/L)
	concentration in Colby Lake	C_cl =	0.00035 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case		Year 10	
Parameter		Vanadium	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0009 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0009 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0009 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0009 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0009 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0009 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0009 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0009 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0009 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0043 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0043 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0043 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0043 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0043 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0043 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0043 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0043 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0043 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.8535 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	2.9089 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	4.9178 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0938 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0189 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0017 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0014 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.8535 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	2.9089 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	4.9178 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0938 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0189 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0017 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0043 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0043 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0043 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	2.5932 (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.02190 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.12169 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.03765 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.01274 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00161 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00	0.00050 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.03767 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00	0.00050 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00001 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00374 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00093 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00216 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.16846 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.10459 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00002 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.00214 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.27624 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.05719 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.14238 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00993 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	0.1438 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.1812 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.1961 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.2411 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.5163 (mg/s)
	mass flux in river at SW-005	M_r5 =	0.7925 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	0.8497 (mg/s)
	mass flux into Colby Lake	M_cl =	1.0021 (mg/s)
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C_r1 =	0.00430 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00430 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00435 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00426 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00530 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00490 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00486 (mg/L)
	concentration in Colby Lake	C_cl =	0.00144 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case		Year 10	
Parameter	Zinc		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0160 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0160 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0160 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0160 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0160 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0160 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0160 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0160 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0620 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0073 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0275 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0275 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0275 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0275 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0275 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0275 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0275 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0275 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0900 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	26.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	26.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	26.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	26.0000 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0046 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0030 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0900 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	26.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	26.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	26.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	26.0000 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0046 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0275 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0275 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0275 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	12.3000 (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.14009 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.20744 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.24078 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.08147 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.01439 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00263 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00001 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.24093 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00263 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00258 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00342 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00987 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00003 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00001 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00002 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00244 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00001 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00002 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.01025 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	1.07733 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.01103 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.00458 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	1.76663 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.36578 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.91055 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.68429 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	0.3475 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.5883 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.6868 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.9590 (mg/s)
	mass flux in river at SW-004A	M_r4A =	2.0520 (mg/s)
	mass flux in river at SW-005	M_r5 =	3.8186 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	4.1844 (mg/s)
	mass flux into Colby Lake	M_cl =	5.7792 (mg/s)
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C_r1 =	0.01041 (mg/L)
	concentration in river at SW-002	C_r2 =	0.01396 (mg/L)
	concentration in river at SW-003	C_r3 =	0.01522 (mg/L)
	concentration in river at SW-004	C_r4 =	0.01695 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.02107 (mg/L)
	concentration in river at SW-005	C_r5 =	0.02362 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.02392 (mg/L)
	concentration in Colby Lake	C_cl =	0.01751 (mg/L)

## Partridge River Mass-Balance Model - Mine Site - Proposed Action

### FLOWS

Case Flow	Year 10 Average Flow Conditions (mean annual)			
Total flow in Partridge River	flow in river at SW-001	Q_r1_M =	5.70	(cfs)
	flow in river at SW-002	Q_r2_M =	11.27	(cfs)
	flow in river at SW-003	Q_r3_M =	12.92	(cfs)
	flow in river at SW-004	Q_r4_M =	19.11	(cfs)
	flow in river at SW-004A	Q_r4a_M =	43.81	(cfs)
	flow in river at SW-005	Q_r5_M =	82.19	(cfs)
	flow in river at USGS Gage	Q_r6_M =	86.54	(cfs)
	total flow into Colby Lake	Q_cl_M =	111.66	(cfs)
	flow check	Q_ck_M =	111.66	(cfs)
input flow data	surface water flow into SW-001	Q_s1_M =	4.52	(cfs)
	surface water flow into SW-002	Q_s2_M =	5.26	(cfs)
	surface water flow into SW-003	Q_s3_M =	1.54	(cfs)
	surface water flow into SW-004	Q_s4_M =	5.79	(cfs)
	surface water flow into SW-004A	Q_s4a_M =	23.24	(cfs)
	surface water flow into SW-005	Q_s5_M =	36.12	(cfs)
	surface water flow into USGS Gage	Q_s6_M =	3.88	(cfs)
	surface water flow into Colby Lake	Q_scl_M =	23.56	(cfs)
	surface water inflow from Hoyt Lakes WWTP	Q_shl_M =	0.39	(cfs)
	surface water inflow from discharges upstream of PM-1	Q_sns_M =	1.00	(cfs)
	West Pit overflow	Q_sms_M =	-	(cfs)
	ground water flow into SW-001	Q_g1_M =	0.18	(cfs)
	ground water flow into SW-002	Q_g2_M =	0.31	(cfs)
	ground water flow into SW-003	Q_g3_M =	0.10	(cfs)
	ground water flow into SW-004	Q_g4_M =	0.31	(cfs)
	ground water flow into SW-004A	Q_g4a_M =	1.38	(cfs)
	ground water flow into SW-005	Q_g5_M =	2.27	(cfs)
	ground water flow into USGS Gage	Q_g6_M =	0.47	(cfs)
	ground water flow into Colby Lake	Q_gcl_M =	1.17	(cfs)
	ground water seepage from East Pit to SW-003	Q_gep_003_M =	-	(cfs)
	ground water seepage from East Pit to SW-004	Q_gep_004_M =	-	(cfs)
	ground water seepage from West Pit	Q_gwp_M =	-	(cfs)
	ground water liner leakage from Cat 1/2 stockpile	Q_gC12_M =	0.0053	(cfs)
	ground water liner leakage from Cat 3 stockpile to SW-003	Q_gC3_003_M =	0.0000	(cfs)
	ground water liner leakage from Cat 3 stockpile to SW-004	Q_gC3_004_M =	-	(cfs)
	ground water liner leakage from Cat 3LO stockpile to SW-003	Q_gC3LO_003_M =	0.0000	(cfs)
	ground water liner leakage from Cat 3LO stockpile to SW-004	Q_gC3LO_004_M =	0.0000	(cfs)
	ground water liner leakage from Cat 4 stockpile	Q_gC4_M =	0.0000	(cfs)
	ground water liner leakage from LO SP	Q_gC4LO_M =	0.0000	(cfs)
	ground water seepage from Overburden Storage	Q_gOS_M =	0.0765	(cfs)
	ground water seepage from Overburden (Cat 1/2)	Q_gO12_M =	0.0673	(cfs)
	ground water liner leakage from Cat 1/2 sumps	Q_gC12s_M =	0.0000	(cfs)
	ground water liner leakage from Cat 3 sumps	Q_gC3s_M =	0.0000	(cfs)
	ground water liner leakage from Cat 3LO sumps	Q_gC3LOs_M =	0.0000	(cfs)
	ground water liner leakage from Cat 4 sumps	Q_gC4s_M =	0.0000	(cfs)
	ground water liner leakage from LO SP sumps	Q_gC4LOs_M =	0.0000	(cfs)
	ground water seepage from Overburden pond - PW1	Q_gOp1_M =	0.0189	(cfs)
	ground water seepage from Overburden pond - PW7	Q_gOp7_M =	-	(cfs)
	ground water leakage from Haul Road pond - PW2	Q_gHRp2_M =	0.0000	(cfs)
	ground water leakage from Haul Road pond - PW4	Q_gHRp4_M =	0.0000	(cfs)
	ground water leakage from RTH pond - PW3	Q_gRTHp_M =	0.0000	(cfs)
	ground water liner leakage from WWTF pond	Q_gWTFp_M =	0.000029	(cfs)

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case	Year 10		
Parameter	Silver		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0001 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0001 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0001 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0001 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0001 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0001 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0001 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0001 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0001 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0001 (mg/L)
	concentration of West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0006 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0006 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0006 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0006 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0006 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0006 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0006 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0006 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	0.0007 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	0.0007 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0007 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0007 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.0007 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	- (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	0.0007 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C gC3s =	0.0007 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.0007 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0007 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0007 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	- (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0006 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0006 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0006 (mg/L)
	concentration of liner leakage from WWTF pond	C gWTFp =	0.0043 (mg/L)
Convert concentration to mass flux	Average Flow		
	mass flux of surface water into SW-001	M s1 =	0.01279 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.00280 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.00340 (mg/s)
	mass flux of surface water into SW-002	M s2 =	0.01490 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.00482 (mg/s)
	mass flux of surface water into SW-003	M s3 =	0.00435 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.00163 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep 003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M gC3 003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO 003 =	0.00000 (mg/s)
	mass flux of liner leakage from cat 3 sumps to SW-003	M gC3s 003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	0.01638 (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.00482 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep 004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M gC3 004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO 004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	- (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs 004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00000 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	0.06577 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.02155 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M gC12 =	0.00011 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	0.10221 (mg/s)
	mass flux of ground water into SW-005	M g5 =	0.03533 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	0.01098 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.00732 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	0.06667 (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	0.01821 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.00110 (mg/s)
Mass balance at each node	Average Flow		
	mass flux in river at SW-001	M r1 =	0.0190 (mg/s)
	mass flux in river at SW-002	M r2 =	0.0387 (mg/s)
	mass flux in river at SW-003	M r3 =	0.0447 (mg/s)
	mass flux in river at SW-004	M r4 =	0.0659 (mg/s)
	mass flux in river at SW-004A	M r4A =	0.1533 (mg/s)
	mass flux in river at SW-005	M r5 =	0.2909 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M r6 =	0.3092 (mg/s)
	mass flux into Colby Lake	M cl =	0.3951 (mg/s)
Convert mass flux to concentration	Average Flow		
	concentration in river at SW-001	C r1 =	0.00012 (mg/L)
	concentration in river at SW-002	C r2 =	0.00012 (mg/L)
	concentration in river at SW-003	C r3 =	0.00012 (mg/L)
	concentration in river at SW-004	C r4 =	0.00012 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00012 (mg/L)
	concentration in river at SW-005	C r5 =	0.00013 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00013 (mg/L)
concentration in Colby Lake	C cl =	0.00013 (mg/L)	

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case		Year 10	
Parameter		Aluminum	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0700 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0700 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0700 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0700 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0700 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0700 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0700 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0700 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0700 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0173 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.1250 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.1250 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.1250 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.1250 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.1250 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.1250 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.1250 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.1250 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	1.6800 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	74.9863 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	83.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	83.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	56.1879 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.4106 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.1400 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	1.6800 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	74.9863 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	83.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	83.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	56.1879 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.4106 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.1250 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.1250 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.1250 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	38.7000 (mg/L)
		Average Flow	
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	8.95493 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.63675 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.48959 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	10.42682 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	1.09446 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	3.04752 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.37030 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.07037 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.01428 (mg/s)
	mass flux of liner leakage from cat 3 sumps to SW-003	M_gC3s_003 =	0.00004 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	11.46411 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	1.09514 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.01428 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.01328 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.01209 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.88859 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00008 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00004 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00005 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.21972 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00005 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00010 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.03224 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	46.04040 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	4.89696 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.25410 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00004 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.26664 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	71.54896 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	8.03013 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	7.68612 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	1.66263 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	46.67236 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	4.13888 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.77259 (mg/s)
		Average Flow	
Mass balance at each node	mass flux in river at SW-001	M_r1 =	10.0813 (mg/s)
	mass flux in river at SW-002	M_r2 =	21.6026 (mg/s)
	mass flux in river at SW-003	M_r3 =	25.1051 (mg/s)
	mass flux in river at SW-004	M_r4 =	38.8448 (mg/s)
	mass flux in river at SW-004A	M_r4A =	90.3030 (mg/s)
	mass flux in river at SW-005	M_r5 =	169.8821 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	179.2308 (mg/s)
	mass flux into Colby Lake	M_cl =	230.8146 (mg/s)
		Average Flow	
Convert mass flux to concentration	concentration in river at SW-001	C_r1 =	0.06249 (mg/L)
	concentration in river at SW-002	C_r2 =	0.06771 (mg/L)
	concentration in river at SW-003	C_r3 =	0.06868 (mg/L)
	concentration in river at SW-004	C_r4 =	0.07183 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.07284 (mg/L)
	concentration in river at SW-005	C_r5 =	0.07303 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.07318 (mg/L)
	concentration in Colby Lake	C_cl =	0.07304 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case		Year 10	
Parameter		Arsenic	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0021 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0021 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0021 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0021 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0021 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0021 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0021 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0021 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0021 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0065 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0022 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0022 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0022 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0022 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0022 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0022 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0022 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0022 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.7100 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.7100 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.7100 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.3024 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0613 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0016 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0027 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.7100 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.7100 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.7100 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.3024 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0613 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0016 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0022 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0022 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0022 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.3900 (mg/L)
		Average Flow	
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	0.26993 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.01100 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.18395 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	0.31429 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.01891 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.09186 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00640 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00067 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00012 (mg/s)
	mass flux of liner leakage from cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.34556 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.01892 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00012 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00005 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00338 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00083 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00032 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	1.38779 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.08462 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.10739 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00002 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.00514 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	2.15669 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.13876 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.23168 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.02873 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	1.40684 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.07152 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.02329 (mg/s)
		Average Flow	
Mass balance at each node	mass flux in river at SW-001	M_r1 =	0.4649 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.7981 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.8971 (mg/s)
	mass flux in river at SW-004	M_r4 =	1.2663 (mg/s)
	mass flux in river at SW-004A	M_r4A =	2.8513 (mg/s)
	mass flux in river at SW-005	M_r5 =	5.1467 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	5.4072 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	6.9088 (mg/s)
			Average Flow
	concentration in river at SW-001	C_r1 =	0.00288 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00250 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00245 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00234 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00230 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00221 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00221 (mg/L)
	concentration in Colby Lake	C_cl =	0.00219 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case	Year 10		
Parameter	Boron		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0450 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0450 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0450 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0450 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0450 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0450 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0450 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0450 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0450 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0960 (mg/L)
	concentration of West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0870 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0870 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0870 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0870 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0870 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0870 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0870 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0870 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	0.7600 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	0.7600 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.7600 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.7600 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.7600 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0622 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	0.0370 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	0.7600 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C gC3s =	0.7600 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.7600 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.7600 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.7600 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0622 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0870 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0870 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0870 (mg/L)
	concentration of liner leakage from WWTF ponc	C gWTFp =	0.8800 (mg/L)
			Average Flow
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	5.75674 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.44318 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	2.71680 (mg/s)
	mass flux of surface water into SW-002	M s2 =	6.70296 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.76175 (mg/s)
	mass flux of surface water into SW-003	M s3 =	1.95912 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.25773 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M gC3_003 =	0.00071 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00013 (mg/s)
	mass flux of liner leakage from cat 3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	7.36978 (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.76221 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00013 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00012 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00016 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.13461 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.03328 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00003 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00007 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00073 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	29.59740 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	3.40829 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M gC12 =	0.11495 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M gC12s =	0.00002 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M gO12 =	0.07047 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	45.99576 (mg/s)
	mass flux of ground water into SW-005	M g5 =	5.58897 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	4.94107 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	1.15719 (mg/s)
mass flux of surface water into Colby Lake	M scl =	30.00366 (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	2.88066 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.49667 (mg/s)	
			Average Flow
Mass balance at each node	mass flux in river at SW-001	M r1 =	8.9167 (mg/s)
	mass flux in river at SW-002	M r2 =	16.3814 (mg/s)
	mass flux in river at SW-003	M r3 =	18.5991 (mg/s)
	mass flux in river at SW-004	M r4 =	26.9003 (mg/s)
	mass flux in river at SW-004A	M r4A =	60.0914 (mg/s)
	mass flux in river at SW-005	M r5 =	111.6761 (mg/s)
	mass flux in river at USGS Gage	M r6 =	117.7744 (mg/s)
mass flux into Colby Lake	M cl =	151.1554 (mg/s)	
			Average Flow
Convert mass flux to concentration	concentration in river at SW-001	C r1 =	0.05527 (mg/L)
	concentration in river at SW-002	C r2 =	0.05135 (mg/L)
	concentration in river at SW-003	C r3 =	0.05088 (mg/L)
	concentration in river at SW-004	C r4 =	0.04974 (mg/L)
	concentration in river at SW-004A	C r4A =	0.04847 (mg/L)
	concentration in river at SW-005	C r5 =	0.04801 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.04809 (mg/L)
concentration in Colby Lake	C cl =	0.04783 (mg/L)	



Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case	Year 10				
Parameter	Barium				
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0077	(mg/L)	
	concentration of surface water into SW-002	C_s2 =	0.0077	(mg/L)	
	concentration of surface water into SW-003	C_s3 =	0.0077	(mg/L)	
	concentration of surface water into SW-004	C_s4 =	0.0077	(mg/L)	
	concentration of surface water into SW-004A	C_s4A =	0.0077	(mg/L)	
	concentration of surface water into SW-005	C_s5 =	0.0077	(mg/L)	
	concentration of surface water into USGS Gage	C_s6 =	0.0077	(mg/L)	
	concentration of surface water into Colby Lake	C_scl =	0.0077	(mg/L)	
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0077	(mg/L)	
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0050	(mg/L)	
	concentration of West Pit overflow	C_sms =	#N/A	(mg/L)	
	concentration of ground water into SW-001	C_g1 =	0.0219	(mg/L)	
	concentration of ground water into SW-002	C_g2 =	0.0219	(mg/L)	
	concentration of ground water into SW-003	C_g3 =	0.0219	(mg/L)	
	concentration of ground water into SW-004	C_g4 =	0.0219	(mg/L)	
	concentration of ground water into SW-004A	C_g4A =	0.0219	(mg/L)	
	concentration of ground water into SW-005	C_g5 =	0.0219	(mg/L)	
	concentration of ground water into USGS Gage	C_g6 =	0.0219	(mg/L)	
	concentration of ground water into Colby Lake	C_gcl =	0.0219	(mg/L)	
	concentration of ground water seepage from East Pit	C_ggp =	#N/A	(mg/L)	
	concentration of ground water seepage from West Pit	C_gwp =	#N/A	(mg/L)	
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.1900	(mg/L)	
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.1900	(mg/L)	
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.1900	(mg/L)	
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.1900	(mg/L)	
	concentration of liner leakage from LOSP	C_gC4LO =	0.1900	(mg/L)	
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0168	(mg/L)	
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0140	(mg/L)	
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.1900	(mg/L)	
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.1900	(mg/L)	
	concentration of liner leakage from Cat 3LO sumps	C_g3LOs =	0.1900	(mg/L)	
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.1900	(mg/L)	
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.1900	(mg/L)	
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0168	(mg/L)	
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A	(mg/L)	
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0219	(mg/L)	
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0219	(mg/L)	
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0219	(mg/L)	
	concentration of liner leakage from WWTF ponc	C_gWTFp =	0.2300	(mg/L)	
					Average Flow
	Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	0.98248	(mg/s)
		mass flux of ground water into SW-001	M_g1 =	0.11166	(mg/s)
mass flux of surface discharges from upstream of PM-1		M_sns =	0.14150	(mg/s)	
mass flux of surface water into SW-002		M_s2 =	1.14397	(mg/s)	
mass flux of ground water into SW-002		M_g2 =	0.19193	(mg/s)	
mass flux of surface water into SW-003		M_s3 =	0.33436	(mg/s)	
mass flux of ground water into SW-003		M_g3 =	0.06494	(mg/s)	
mass flux of seepage from East Pit to SW-003		M_ggp_003 =	#N/A	(mg/s)	
mass flux of liner leakage from Cat 3 stockpile to SW-003		M_gC3_003 =	0.00018	(mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-003		M_gC3LO_00	0.00003	(mg/s)	
mass flux of liner leakage from cat 3 sumps to SW-003		M_gC3s_003	0.00000	(mg/s)	
mass flux of surface water into SW-004		M_s4 =	1.25778	(mg/s)	
mass flux of ground water into SW-004		M_g4 =	0.19204	(mg/s)	
mass flux of seepage from East Pit to SW-004		M_ggp_004 =	#N/A	(mg/s)	
mass flux of seepage from West Pit		M_gwp =	#N/A	(mg/s)	
mass flux of liner leakage from Cat 3 stockpile to SW-004		M_gC3_004 =	-	(mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-004		M_gC3LO_00	0.00003	(mg/s)	
mass flux of liner leakage from Cat 4 stockpile		M_gC4 =	0.00003	(mg/s)	
mass flux of liner leakage from LOSP		M_gC4LO =	0.00004	(mg/s)	
mass flux of seepage from Overburden (Storage)		M_gOS =	0.03643	(mg/s)	
mass flux of liner leakage from Cat 3LO sumps to SW-004		M_gC3LOs_0	0.00000	(mg/s)	
mass flux of liner leakage from Cat 4 sumps		M_gC4s =	0.00000	(mg/s)	
mass flux of liner leakage from LOSP sumps		M_gC4LOs =	0.00000	(mg/s)	
mass flux of seepage from Overburden Ponds - PW1		M_gOp1 =	0.00901	(mg/s)	
mass flux of leakage from Haul Road Pond - PW2		M_gHRp2 =	0.00001	(mg/s)	
mass flux of leakage from Haul Road Pond - PW4		M_gHRp4 =	0.00002	(mg/s)	
mass flux of leakage from RTH Pond - PW3		M_gRTHp =	0.00000	(mg/s)	
mass flux of liner leakage from WWTF pond		M_gWTFp =	0.00019	(mg/s)	
mass flux of surface water into SW-004A		M_s4A =	5.05129	(mg/s)	
mass flux of ground water into SW-004A		M_g4A =	0.85873	(mg/s)	
mass flux of West Pit overflow		M_sms =	#N/A	(mg/s)	
mass flux of liner leakage from Cat 1/2 stockpile		M_gC12 =	0.02874	(mg/s)	
mass flux of liner leakage from Cat 1/2 sumps		M_gC12s =	0.00000	(mg/s)	
mass flux of seepage from Overburden (Cat 1/2)		M_gO12 =	0.02666	(mg/s)	
mass flux of seepage from Overburden Pond - PW7		M_gOp7 =	#N/A	(mg/s)	
mass flux of surface water into SW-005		M_s5 =	7.84994	(mg/s)	
mass flux of ground water into SW-005		M_g5 =	1.40816	(mg/s)	
mass flux of surface water into USGS Gage		M_s6 =	0.84328	(mg/s)	
mass flux of ground water into USGS Gage		M_g6 =	0.29156	(mg/s)	
mass flux of surface water into Colby Lake		M_scl =	5.12062	(mg/s)	
mass flux of ground water into Colby Lake		M_gcl =	0.72579	(mg/s)	
mass flux of surface water from Hoyt Lakes WWTP		M_shl =	0.08476	(mg/s)	
Mass balance at each node					
Convert mass flux to concentration					

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case		Year 10	
Parameter		Beryllium	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0001 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0001 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0001 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0001 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0001 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0001 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0001 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0001 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0001 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0001 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0001 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0001 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0001 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0001 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0001 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0001 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0001 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0001 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.0023 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0023 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0023 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0023 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	- (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.0023 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0023 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0023 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0023 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	- (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0001 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0001 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0001 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0027 (mg/L)
		Average Flow	
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	0.01279 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00074 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.00283 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	0.01490 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.00127 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.00435 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00043 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00	0.00000 (mg/s)
	mass flux of liner leakage from cat 3 sumps to SW-003	M_gC3s_003	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.01638 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.00127 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	- (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00000 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	0.06577 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.00568 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.00003 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	0.10221 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.00931 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.01098 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.00193 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	0.06667 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.00480 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00110 (mg/s)
		Average Flow	
Mass balance at each node	mass flux in river at SW-001	M_r1 =	0.0164 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.0325 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.0373 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.0550 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.1264 (mg/s)
	mass flux in river at SW-005	M_r5 =	0.2380 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	0.2509 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	0.3235 (mg/s)
			Average Flow
	concentration in river at SW-001	C_r1 =	0.00010 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00010 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00010 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00010 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00010 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00010 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00010 (mg/L)
	concentration in Colby Lake	C_cl =	0.00010 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case	Year 10			
Parameter	Calcium			
Input concentration data	concentration of surface water into SW-001	C s1 =	17.0000 (mg/L)	
	concentration of surface water into SW-002	C s2 =	17.0000 (mg/L)	
	concentration of surface water into SW-003	C s3 =	17.0000 (mg/L)	
	concentration of surface water into SW-004	C s4 =	17.0000 (mg/L)	
	concentration of surface water into SW-004A	C s4A =	17.0000 (mg/L)	
	concentration of surface water into SW-005	C s5 =	17.0000 (mg/L)	
	concentration of surface water into USGS Gage	C s6 =	17.0000 (mg/L)	
	concentration of surface water into Colby Lake	C scl =	17.0000 (mg/L)	
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	17.0000 (mg/L)	
	concentration of surface water discharges from upstream of PM-1	C sns =	24.5000 (mg/L)	
	concentration of West Pit overflow	C sms =	#N/A (mg/L)	
	concentration of ground water into SW-001	C g1 =	14.7900 (mg/L)	
	concentration of ground water into SW-002	C g2 =	14.7900 (mg/L)	
	concentration of ground water into SW-003	C g3 =	14.7900 (mg/L)	
	concentration of ground water into SW-004	C g4 =	14.7900 (mg/L)	
	concentration of ground water into SW-004A	C g4A =	14.7900 (mg/L)	
	concentration of ground water into SW-005	C g5 =	14.7900 (mg/L)	
	concentration of ground water into USGS Gage	C g6 =	14.7900 (mg/L)	
	concentration of ground water into Colby Lake	C gcl =	14.7900 (mg/L)	
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)	
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)	
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	303.8429 (mg/L)	
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	480.0000 (mg/L)	
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	480.0000 (mg/L)	
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	480.0000 (mg/L)	
	concentration of liner leakage from LOSP	C gC4LO =	124.8039 (mg/L)	
	concentration of seepage from Overburden (Storage)	C gos =	9.3700 (mg/L)	
	concentration of seepage from Overburden (Cat 1/2)	C go12 =	15.8000 (mg/L)	
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	303.8429 (mg/L)	
	concentration of liner leakage from Cat 3 sumps	C gC3s =	480.0000 (mg/L)	
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	480.0000 (mg/L)	
	concentration of liner leakage from Cat 4 sumps	C gC4s =	480.0000 (mg/L)	
	concentration of liner leakage from LOSP sumps	C gC4LOs =	124.8039 (mg/L)	
	concentration of seepage from Overburden Ponds - PW1	C goP1 =	9.3700 (mg/L)	
	concentration of seepage from Overburden Pond - PW7	C goP7 =	#N/A (mg/L)	
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	14.7900 (mg/L)	
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	14.7900 (mg/L)	
	concentration of leakage from RTH Pond - PW3	C gRTHp =	14.7900 (mg/L)	
	concentration of liner leakage from WWTF pond	C_gWTFp =	375.0000 (mg/L)	
	Convert concentration to mass flux	Average Flow		
		mass flux of surface water into SW-001	M s1 =	2,174.76906 (mg/s)
		mass flux of ground water into SW-001	M g1 =	75.34026 (mg/s)
mass flux of surface discharges from upstream of PM-1		M sns =	693.35000 (mg/s)	
mass flux of surface water into SW-002		M s2 =	2,532.22851 (mg/s)	
mass flux of ground water into SW-002		M g2 =	129.49691 (mg/s)	
mass flux of surface water into SW-003		M s3 =	740.11097 (mg/s)	
mass flux of ground water into SW-003		M g3 =	43.81436 (mg/s)	
mass flux of seepage from East Pit to SW-003		M gep 003 =	#N/A (mg/s)	
mass flux of liner leakage from Cat 3 stockpile to SW-003		M gC3 003 =	0.45042 (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-003		M gC3LO 00 =	0.08261 (mg/s)	
mass flux of liner leakage from cat 3 sumps to SW-003		M gC3s 003 =	0.00025 (mg/s)	
mass flux of surface water into SW-004		M s4 =	2,784.13983 (mg/s)	
mass flux of ground water into SW-004		M g4 =	129.57641 (mg/s)	
mass flux of seepage from East Pit to SW-004		M gep 004 =	#N/A (mg/s)	
mass flux of seepage from West Pit		M gwp =	#N/A (mg/s)	
mass flux of liner leakage from Cat 3 stockpile to SW-004		M gC3 004 =	- (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-004		M gC3LO 00 =	0.08261 (mg/s)	
mass flux of liner leakage from Cat 4 stockpile		M gC4 =	0.07682 (mg/s)	
mass flux of liner leakage from LOSP		M gC4LO =	0.02685 (mg/s)	
mass flux of seepage from Overburden (Storage)		M gos =	20.27794 (mg/s)	
mass flux of liner leakage from Cat 3LO sumps to SW-004		M gC3LOs 0 =	0.00047 (mg/s)	
mass flux of liner leakage from Cat 4 sumps		M gC4s =	0.00022 (mg/s)	
mass flux of liner leakage from LOSP sumps		M gC4LOs =	0.00011 (mg/s)	
mass flux of seepage from Overburden Ponds - PW1		M goP1 =	5.01400 (mg/s)	
mass flux of leakage from Haul Road Pond - PW2		M gHRp2 =	0.00563 (mg/s)	
mass flux of leakage from Haul Road Pond - PW4		M gHRp4 =	0.01206 (mg/s)	
mass flux of leakage from RTH Pond - PW3		M gRTHp =	0.00000 (mg/s)	
mass flux of liner leakage from WWTF pond		M gWTFp =	0.31239 (mg/s)	
mass flux of surface water into SW-004A		M s4A =	11,181.23954 (mg/s)	
mass flux of ground water into SW-004A		M g4A =	579.40885 (mg/s)	
mass flux of West Pit overflow		M sms =	#N/A (mg/s)	
mass flux of liner leakage from Cat 1/2 stockpile		M gC12 =	45.95633 (mg/s)	
mass flux of liner leakage from Cat 1/2 sumps		M gC12s =	0.00666 (mg/s)	
mass flux of seepage from Overburden (Cat 1/2)		M go12 =	30.09225 (mg/s)	
mass flux of seepage from Overburden Pond - PW7		M goP7 =	#N/A (mg/s)	
mass flux of surface water into SW-005		M s5 =	17,376.17592 (mg/s)	
mass flux of ground water into SW-005		M g5 =	950.12439 (mg/s)	
mass flux of surface water into USGS Gage		M s6 =	1,866.62806 (mg/s)	
mass flux of ground water into USGS Gage		M g6 =	196.72179 (mg/s)	
mass flux of surface water into Colby Lake		M scl =	11,334.71600 (mg/s)	
mass flux of ground water into Colby Lake		M gcl =	489.71169 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP		M shl =	187.62900 (mg/s)	
Mass balance at each node	Average Flow			
	mass flux in river at SW-001	M r1 =	2,943.4593 (mg/s)	
	mass flux in river at SW-002	M r2 =	5,605.1847 (mg/s)	
	mass flux in river at SW-003	M r3 =	6,389.6434 (mg/s)	
	mass flux in river at SW-004	M r4 =	9,329.1687 (mg/s)	
	mass flux in river at SW-004A	M r4A =	21,165.8723 (mg/s)	
	mass flux in river at SW-005	M r5 =	39,492.1726 (mg/s)	
	mass flux in river at USGS Gage	M r6 =	41,555.5225 (mg/s)	
	mass flux into Colby Lake	M cl =	53,567.5792 (mg/s)	
Convert mass flux to concentration	Average Flow			
	concentration in river at SW-001	C r1 =	18.24591 (mg/L)	
	concentration in river at SW-002	C r2 =	17.56935 (mg/L)	
	concentration in river at SW-003	C r3 =	17.48042 (mg/L)	
	concentration in river at SW-004	C r4 =	17.25173 (mg/L)	
	concentration in river at SW-004A	C r4A =	17.07312 (mg/L)	
	concentration in river at SW-005	C r5 =	16.97794 (mg/L)	
	concentration in river at USGS Gage	C r6 =	16.96704 (mg/L)	
	concentration in Colby Lake	C cl =	16.95130 (mg/L)	

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case		Year 10	
Parameter		Cadmium	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0001 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0001 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0001 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0001 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0001 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0001 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0001 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0001 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0001 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0001 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0001 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0001 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0001 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0001 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0001 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0001 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0001 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0001 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.0149 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0149 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0149 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0149 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0001 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.0149 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0149 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0149 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0149 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0001 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0001 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0001 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0001 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0100 (mg/L)
		Average Flow	
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	0.01279 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00051 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.00283 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	0.01490 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.00088 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.00435 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00030 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00	0.00000 (mg/s)
	mass flux of liner leakage from cat 3 sumps to SW-003	M_gC3s_003	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.01638 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.00088 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00013 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00003 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00001 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	0.06577 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.00392 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.00003 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	0.10221 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.00642 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.01098 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.00133 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	0.06667 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.00331 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00110 (mg/s)
		Average Flow	
Mass balance at each node	mass flux in river at SW-001	M_r1 =	0.0161 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.0319 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.0366 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.0540 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.1237 (mg/s)
	mass flux in river at SW-005	M_r5 =	0.2324 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	0.2447 (mg/s)
	mass flux into Colby Lake	M_cl =	0.3158 (mg/s)
		Average Flow	
Convert mass flux to concentration	concentration in river at SW-001	C_r1 =	0.00010 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00010 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00010 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00010 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00010 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00010 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00010 (mg/L)
	concentration in Colby Lake	C_cl =	0.00010 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case	Year 10		
Parameter	Chloride		
Input concentration data	concentration of surface water into SW-001	C_s1 =	8.0000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	8.0000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	8.0000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	8.0000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	8.0000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	8.0000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	8.0000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	8.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	8.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	1.6000 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	6.6000 (mg/L)
	concentration of ground water into SW-002	C_g2 =	6.6000 (mg/L)
	concentration of ground water into SW-003	C_g3 =	6.6000 (mg/L)
	concentration of ground water into SW-004	C_g4 =	6.6000 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	6.6000 (mg/L)
	concentration of ground water into SW-005	C_g5 =	6.6000 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	6.6000 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	6.6000 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	13.2328 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	3.7388 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	7.7121 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	4.7284 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	1.1862 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	5.3500 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	2.3300 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	13.2328 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	3.7388 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	7.7121 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	4.7284 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	1.1862 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	5.3500 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	6.6000 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	6.6000 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	6.6000 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	27.1000 (mg/L)
Convert concentration to mass flux	Average Flow		
	mass flux of surface water into SW-001	M_s1 =	1,023.42074 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	33.62040 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	45.28000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	1,191.63695 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	57.78767 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	348.28752 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	19.55205 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00351 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00133 (mg/s)
	mass flux of liner leakage from cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	1,310.18345 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	57.82314 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00133 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00076 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00026 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	11.57812 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	2.86285 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00251 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00538 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.02258 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	5,261.75979 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	258.55973 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	2.00147 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00029 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	4.43765 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	8,177.02396 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	423.99060 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	878.41321 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	87.78660 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	5,333.98400 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	218.53260 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	88.29600 (mg/s)
Mass balance at each node	Average Flow		
	mass flux in river at SW-001	M_r1 =	1,102.3211 (mg/s)
	mass flux in river at SW-002	M_r2 =	2,351.7457 (mg/s)
	mass flux in river at SW-003	M_r3 =	2,719.5902 (mg/s)
	mass flux in river at SW-004	M_r4 =	4,102.0705 (mg/s)
	mass flux in river at SW-004A	M_r4A =	9,628.8295 (mg/s)
	mass flux in river at SW-005	M_r5 =	18,229.8440 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	19,196.0438 (mg/s)
	mass flux into Colby Lake	M_cl =	24,836.8564 (mg/s)
Convert mass flux to concentration	Average Flow		
	concentration in river at SW-001	C_r1 =	6.83307 (mg/L)
	concentration in river at SW-002	C_r2 =	7.37151 (mg/L)
	concentration in river at SW-003	C_r3 =	7.44010 (mg/L)
	concentration in river at SW-004	C_r4 =	7.58565 (mg/L)
	concentration in river at SW-004A	C_r4A =	7.76695 (mg/L)
	concentration in river at SW-005	C_r5 =	7.83713 (mg/L)
	concentration in river at USGS Gage	C_r6 =	7.83771 (mg/L)
	concentration in Colby Lake	C_cl =	7.85955 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case	Year 10			
Parameter	Cobalt			
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0005 (mg/L)	
	concentration of surface water into SW-002	C_s2 =	0.0005 (mg/L)	
	concentration of surface water into SW-003	C_s3 =	0.0005 (mg/L)	
	concentration of surface water into SW-004	C_s4 =	0.0005 (mg/L)	
	concentration of surface water into SW-004A	C_s4A =	0.0005 (mg/L)	
	concentration of surface water into SW-005	C_s5 =	0.0005 (mg/L)	
	concentration of surface water into USGS Gage	C_s6 =	0.0005 (mg/L)	
	concentration of surface water into Colby Lake	C_scl =	0.0005 (mg/L)	
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0005 (mg/L)	
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0005 (mg/L)	
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)	
	concentration of ground water into SW-001	C_g1 =	0.0017 (mg/L)	
	concentration of ground water into SW-002	C_g2 =	0.0017 (mg/L)	
	concentration of ground water into SW-003	C_g3 =	0.0017 (mg/L)	
	concentration of ground water into SW-004	C_g4 =	0.0017 (mg/L)	
	concentration of ground water into SW-004A	C_g4A =	0.0017 (mg/L)	
	concentration of ground water into SW-005	C_g5 =	0.0017 (mg/L)	
	concentration of ground water into USGS Gage	C_g6 =	0.0017 (mg/L)	
	concentration of ground water into Colby Lake	C_gcl =	0.0017 (mg/L)	
	concentration of ground water seepage from East Pit	C_ggp =	#N/A (mg/L)	
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)	
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0190 (mg/L)	
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	35.7147 (mg/L)	
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	44.0000 (mg/L)	
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	21.6659 (mg/L)	
	concentration of liner leakage from LOSP	C_gC4LO =	4.3932 (mg/L)	
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0011 (mg/L)	
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0013 (mg/L)	
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0190 (mg/L)	
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	35.7147 (mg/L)	
	concentration of liner leakage from Cat 3LO sumps	C_g3LOs =	44.0000 (mg/L)	
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	21.6659 (mg/L)	
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	4.3932 (mg/L)	
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0011 (mg/L)	
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)	
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0017 (mg/L)	
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0017 (mg/L)	
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0017 (mg/L)	
	concentration of liner leakage from WWTF ponc	C_gWTFp =	10.9000 (mg/L)	
				Average Flow
	Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	0.06396 (mg/s)
mass flux of ground water into SW-001		M_g1 =	0.00841 (mg/s)	
mass flux of surface discharges from upstream of PM-1		M_sns =	0.01415 (mg/s)	
mass flux of surface water into SW-002		M_s2 =	0.07448 (mg/s)	
mass flux of ground water into SW-002		M_g2 =	0.01445 (mg/s)	
mass flux of surface water into SW-003		M_s3 =	0.02177 (mg/s)	
mass flux of ground water into SW-003		M_g3 =	0.00489 (mg/s)	
mass flux of seepage from East Pit to SW-003		M_ggp_003 =	#N/A (mg/s)	
mass flux of liner leakage from Cat 3 stockpile to SW-003		M_gC3_003 =	0.03351 (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-003		M_gC3LO_00 =	0.00757 (mg/s)	
mass flux of liner leakage from cat 3 sumps to SW-003		M_gC3s_003 =	0.00002 (mg/s)	
mass flux of surface water into SW-004		M_s4 =	0.08189 (mg/s)	
mass flux of ground water into SW-004		M_g4 =	0.01446 (mg/s)	
mass flux of seepage from East Pit to SW-004		M_ggp_004 =	#N/A (mg/s)	
mass flux of seepage from West Pit		M_gwp =	#N/A (mg/s)	
mass flux of liner leakage from Cat 3 stockpile to SW-004		M_gC3_004 =	- (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-004		M_gC3LO_00 =	0.00757 (mg/s)	
mass flux of liner leakage from Cat 4 stockpile		M_gC4 =	0.00347 (mg/s)	
mass flux of liner leakage from LOSP		M_gC4LO =	0.00095 (mg/s)	
mass flux of seepage from Overburden (Storage)		M_gOS =	0.00240 (mg/s)	
mass flux of liner leakage from Cat 3LO sumps to SW-004		M_gC3LOs_0 =	0.00004 (mg/s)	
mass flux of liner leakage from Cat 4 sumps		M_gC4s =	0.00001 (mg/s)	
mass flux of liner leakage from LOSP sumps		M_gC4LOs =	0.00000 (mg/s)	
mass flux of seepage from Overburden Ponds - PW1		M_gOp1 =	0.00059 (mg/s)	
mass flux of leakage from Haul Road Pond - PW2		M_gHRp2 =	0.00000 (mg/s)	
mass flux of leakage from Haul Road Pond - PW4		M_gHRp4 =	0.00000 (mg/s)	
mass flux of leakage from RTH Pond - PW3		M_gRTHp =	0.00000 (mg/s)	
mass flux of liner leakage from WWTF pond		M_gWTFp =	0.00908 (mg/s)	
mass flux of surface water into SW-004A		M_s4A =	0.32886 (mg/s)	
mass flux of ground water into SW-004A		M_g4A =	0.06464 (mg/s)	
mass flux of West Pit overflow		M_sms =	#N/A (mg/s)	
mass flux of liner leakage from Cat 1/2 stockpile		M_gC12 =	0.00287 (mg/s)	
mass flux of liner leakage from Cat 1/2 sumps		M_gC12s =	0.00000 (mg/s)	
mass flux of seepage from Overburden (Cat 1/2)		M_gO12 =	0.00248 (mg/s)	
mass flux of seepage from Overburden Pond - PW7		M_gOp7 =	#N/A (mg/s)	
mass flux of surface water into SW-005		M_s5 =	0.51106 (mg/s)	
mass flux of ground water into SW-005		M_g5 =	0.10600 (mg/s)	
mass flux of surface water into USGS Gage		M_s6 =	0.05490 (mg/s)	
mass flux of ground water into USGS Gage		M_g6 =	0.02195 (mg/s)	
mass flux of surface water into Colby Lake		M_scl =	0.33337 (mg/s)	
mass flux of ground water into Colby Lake		M_gcl =	0.05463 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP		M_shl =	0.00552 (mg/s)	
			Average Flow	
Mass balance at each node	mass flux in river at SW-001	M_r1 =	0.0865 (mg/s)	
	mass flux in river at SW-002	M_r2 =	0.1754 (mg/s)	
	mass flux in river at SW-003	M_r3 =	0.2432 (mg/s)	
	mass flux in river at SW-004	M_r4 =	0.3637 (mg/s)	
	mass flux in river at SW-004A	M_r4A =	0.7625 (mg/s)	
	mass flux in river at SW-005	M_r5 =	1.3796 (mg/s)	
	mass flux in river at USGS Gage	M_r6 =	1.4564 (mg/s)	
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	1.8499 (mg/s)	
	concentration in river at SW-001	C_r1 =	0.00054 (mg/L)	
	concentration in river at SW-002	C_r2 =	0.00055 (mg/L)	
	concentration in river at SW-003	C_r3 =	0.00067 (mg/L)	
	concentration in river at SW-004	C_r4 =	0.00067 (mg/L)	
	concentration in river at SW-004A	C_r4A =	0.00062 (mg/L)	
	concentration in river at SW-005	C_r5 =	0.00059 (mg/L)	
	concentration in river at USGS Gage	C_r6 =	0.00059 (mg/L)	
	concentration in Colby Lake	C_cl =	0.00059 (mg/L)	



Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case	Year 10		
Parameter	Copper		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0017 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0017 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0017 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0017 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0017 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0017 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0017 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0017 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0190 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0012 (mg/L)
	concentration of West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0030 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0030 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0030 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0030 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0030 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0030 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0030 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0030 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	0.0920 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	201.0019 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	202.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	3.9106 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.7930 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0214 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	0.0170 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	0.0920 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C gC3s =	201.0019 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	202.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	3.9106 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.7930 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0214 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0030 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0030 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0030 (mg/L)
	concentration of liner leakage from WWTF pond	C gWTFp =	11.4000 (mg/L)
			Average Flow
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	0.21748 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.01503 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.03509 (mg/s)
	mass flux of surface water into SW-002	M s2 =	0.25322 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.02583 (mg/s)
	mass flux of surface water into SW-003	M s3 =	0.07401 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.00874 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M gC3_003 =	0.18862 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.03476 (mg/s)
	mass flux of liner leakage from cat 3 sumps to SW-003	M gC3s_003 =	0.00011 (mg/s)
	mass flux of surface water into SW-004	M s4 =	0.27841 (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.02585 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.03476 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00063 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00017 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.04640 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00020 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.01147 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00950 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	1.11812 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.11557 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M gC12 =	0.01392 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M gO12 =	0.03238 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	1.73762 (mg/s)
	mass flux of ground water into SW-005	M g5 =	0.18951 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	0.18666 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.03924 (mg/s)
mass flux of surface water into Colby Lake	M scl =	1.13347 (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	0.09768 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.20970 (mg/s)	
Mass balance at each node	Average Flow		
	mass flux in river at SW-001	M r1 =	0.2676 (mg/s)
	mass flux in river at SW-002	M r2 =	0.5466 (mg/s)
	mass flux in river at SW-003	M r3 =	0.8529 (mg/s)
	mass flux in river at SW-004	M r4 =	1.2603 (mg/s)
	mass flux in river at SW-004A	M r4A =	2.5403 (mg/s)
	mass flux in river at SW-005	M r5 =	4.4674 (mg/s)
	mass flux in river at USGS Gage	M r6 =	4.6933 (mg/s)
	mass flux into Colby Lake	M cl =	6.1341 (mg/s)
Convert mass flux to concentration	Average Flow		
	concentration in river at SW-001	C r1 =	0.00166 (mg/L)
	concentration in river at SW-002	C r2 =	0.00171 (mg/L)
	concentration in river at SW-003	C r3 =	0.00233 (mg/L)
	concentration in river at SW-004	C r4 =	0.00233 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00205 (mg/L)
	concentration in river at SW-005	C r5 =	0.00192 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00192 (mg/L)
	concentration in Colby Lake	C cl =	0.00194 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case	Year 10			
Parameter	Fluoride			
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0700 (mg/L)	
	concentration of surface water into SW-002	C s2 =	0.0700 (mg/L)	
	concentration of surface water into SW-003	C s3 =	0.0700 (mg/L)	
	concentration of surface water into SW-004	C s4 =	0.0700 (mg/L)	
	concentration of surface water into SW-004A	C s4A =	0.0700 (mg/L)	
	concentration of surface water into SW-005	C s5 =	0.0700 (mg/L)	
	concentration of surface water into USGS Gage	C s6 =	0.0700 (mg/L)	
	concentration of surface water into Colby Lake	C scl =	0.0700 (mg/L)	
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0700 (mg/L)	
	concentration of surface water discharges from upstream of PM-1	C sns =	0.1400 (mg/L)	
	concentration of West Pit overflow	C sms =	#N/A (mg/L)	
	concentration of ground water into SW-001	C g1 =	0.2800 (mg/L)	
	concentration of ground water into SW-002	C g2 =	0.2800 (mg/L)	
	concentration of ground water into SW-003	C g3 =	0.2800 (mg/L)	
	concentration of ground water into SW-004	C g4 =	0.2800 (mg/L)	
	concentration of ground water into SW-004A	C g4A =	0.2800 (mg/L)	
	concentration of ground water into SW-005	C g5 =	0.2800 (mg/L)	
	concentration of ground water into USGS Gage	C g6 =	0.2800 (mg/L)	
	concentration of ground water into Colby Lake	C gcl =	0.2800 (mg/L)	
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)	
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)	
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	0.0625 (mg/L)	
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	0.0622 (mg/L)	
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0622 (mg/L)	
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0622 (mg/L)	
	concentration of liner leakage from LOSP	C gC4LO =	0.0628 (mg/L)	
	concentration of seepage from Overburden (Storage)	C gOS =	0.2239 (mg/L)	
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	0.4200 (mg/L)	
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	0.0625 (mg/L)	
	concentration of liner leakage from Cat 3 sumps	C gC3s =	0.0622 (mg/L)	
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.0622 (mg/L)	
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0622 (mg/L)	
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0628 (mg/L)	
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.2239 (mg/L)	
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)	
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.2800 (mg/L)	
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.2800 (mg/L)	
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.2800 (mg/L)	
	concentration of liner leakage from WWTF pond	C_gWTFp =	17.9000 (mg/L)	
	Convert concentration to mass flux	Average Flow		
		mass flux of surface water into SW-001	M s1 =	8.95493 (mg/s)
		mass flux of ground water into SW-001	M g1 =	1.42632 (mg/s)
		mass flux of surface discharges from upstream of PM-1	M sns =	3.96200 (mg/s)
mass flux of surface water into SW-002		M s2 =	10.42682 (mg/s)	
mass flux of ground water into SW-002		M g2 =	2.45160 (mg/s)	
mass flux of surface water into SW-003		M s3 =	3.04752 (mg/s)	
mass flux of ground water into SW-003		M g3 =	0.82948 (mg/s)	
mass flux of seepage from East Pit to SW-003		M gep 003 =	#N/A (mg/s)	
mass flux of liner leakage from Cat 3 stockpile to SW-003		M gC3 003 =	0.00006 (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-003		M gC3LO 00 =	0.00001 (mg/s)	
mass flux of liner leakage from cat 3 sumps to SW-003		M gC3s 003 =	0.00000 (mg/s)	
mass flux of surface water into SW-004		M s4 =	11.46411 (mg/s)	
mass flux of ground water into SW-004		M g4 =	2.45310 (mg/s)	
mass flux of seepage from East Pit to SW-004		M gep 004 =	#N/A (mg/s)	
mass flux of seepage from West Pit		M gwp =	#N/A (mg/s)	
mass flux of liner leakage from Cat 3 stockpile to SW-004		M gC3 004 =	- (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-004		M gC3LO 00 =	0.00001 (mg/s)	
mass flux of liner leakage from Cat 4 stockpile		M gC4 =	0.00001 (mg/s)	
mass flux of liner leakage from LOSP		M gC4LO =	0.00001 (mg/s)	
mass flux of seepage from Overburden (Storage)		M gOS =	0.48453 (mg/s)	
mass flux of liner leakage from Cat 3LO sumps to SW-004		M gC3LOs 0 =	0.00000 (mg/s)	
mass flux of liner leakage from Cat 4 sumps		M gC4s =	0.00000 (mg/s)	
mass flux of liner leakage from LOSP sumps		M gC4LOs =	0.00000 (mg/s)	
mass flux of seepage from Overburden Ponds - PW1		M gOp1 =	0.11981 (mg/s)	
mass flux of leakage from Haul Road Pond - PW2		M gHRp2 =	0.00011 (mg/s)	
mass flux of leakage from Haul Road Pond - PW4		M gHRp4 =	0.00023 (mg/s)	
mass flux of leakage from RTH Pond - PW3		M gRTHp =	0.00000 (mg/s)	
mass flux of liner leakage from WWTF pond		M gWTFp =	0.01491 (mg/s)	
mass flux of surface water into SW-004A		M s4A =	46.04040 (mg/s)	
mass flux of ground water into SW-004A		M g4A =	10.96920 (mg/s)	
mass flux of West Pit overflow		M sms =	#N/A (mg/s)	
mass flux of liner leakage from Cat 1/2 stockpile		M gC12 =	0.00945 (mg/s)	
mass flux of liner leakage from Cat 1/2 sumps		M gC12s =	0.00000 (mg/s)	
mass flux of seepage from Overburden (Cat 1/2)		M gO12 =	0.79992 (mg/s)	
mass flux of seepage from Overburden Pond - PW7		M gOp7 =	#N/A (mg/s)	
mass flux of surface water into SW-005		M s5 =	71.54896 (mg/s)	
mass flux of ground water into SW-005		M g5 =	17.98748 (mg/s)	
mass flux of surface water into USGS Gage		M s6 =	7.68612 (mg/s)	
mass flux of ground water into USGS Gage		M g6 =	3.72428 (mg/s)	
mass flux of surface water into Colby Lake		M scl =	46.67236 (mg/s)	
mass flux of ground water into Colby Lake		M gcl =	9.27108 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP		M shl =	0.77259 (mg/s)	
Mass balance at each node	Average Flow			
	mass flux in river at SW-001	M r1 =	14.3433 (mg/s)	
	mass flux in river at SW-002	M r2 =	27.2217 (mg/s)	
	mass flux in river at SW-003	M r3 =	31.0967 (mg/s)	
	mass flux in river at SW-004	M r4 =	45.6356 (mg/s)	
	mass flux in river at SW-004A	M r4A =	103.4545 (mg/s)	
	mass flux in river at SW-005	M r5 =	192.9910 (mg/s)	
	mass flux in river at USGS Gage	M r6 =	204.4014 (mg/s)	
	mass flux into Colby Lake	M cl =	261.1174 (mg/s)	
Convert mass flux to concentration	Average Flow			
	concentration in river at SW-001	C r1 =	0.08891 (mg/L)	
	concentration in river at SW-002	C r2 =	0.08533 (mg/L)	
	concentration in river at SW-003	C r3 =	0.08508 (mg/L)	
	concentration in river at SW-004	C r4 =	0.08439 (mg/L)	
	concentration in river at SW-004A	C r4A =	0.08345 (mg/L)	
	concentration in river at SW-005	C r5 =	0.08297 (mg/L)	
	concentration in river at USGS Gage	C r6 =	0.08346 (mg/L)	
	concentration in Colby Lake	C cl =	0.08263 (mg/L)	

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case Parameter	Year 10 Iron		
Input concentration data	concentration of surface water into SW-001	C_s1 =	1.6000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	1.6000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	1.6000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	1.6000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	1.6000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	1.6000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	1.6000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	1.6000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	1.6000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0300 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	2.8440 (mg/L)
	concentration of ground water into SW-002	C_g2 =	2.8440 (mg/L)
	concentration of ground water into SW-003	C_g3 =	2.8440 (mg/L)
	concentration of ground water into SW-004	C_g4 =	2.8440 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	2.8440 (mg/L)
	concentration of ground water into SW-005	C_g5 =	2.8440 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	2.8440 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	2.8440 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.8100 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	82.5419 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	137.7914 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	235.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	235.0000 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.2255 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.1500 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.8100 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	82.5419 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	137.7914 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	235.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	235.0000 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.2255 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	2.8440 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	2.8440 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	2.8440 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	82.4000 (mg/L)
Convert concentration to mass flux	Average Flow		
	mass flux of surface water into SW-001	M_s1 =	204.68415 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	14.48734 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.84900 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	238.32739 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	24.90123 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	69.65750 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	8.42516 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.07746 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.02371 (mg/s)
	mass flux of liner leakage from cat 3 sumps to SW-003	M_gC3s_003 =	0.00004 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	262.03669 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	24.91652 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.02371 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.03761 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.05066 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.48801 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00014 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00011 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00021 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.12067 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00108 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00232 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.06864 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	1,052.35196 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	111.41574 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.12251 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00002 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.28569 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	1,635.40479 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	182.70140 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	175.68264 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	37.82804 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	1,066.79680 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	94.16768 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	17,65920 (mg/s)
Mass balance at each node	Average Flow		
	mass flux in river at SW-001	M_r1 =	220.0205 (mg/s)
	mass flux in river at SW-002	M_r2 =	483.2491 (mg/s)
	mass flux in river at SW-003	M_r3 =	561.4330 (mg/s)
	mass flux in river at SW-004	M_r4 =	849.1792 (mg/s)
	mass flux in river at SW-004A	M_r4A =	2,013.3562 (mg/s)
	mass flux in river at SW-005	M_r5 =	3,831.4614 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	4,044.9720 (mg/s)
	mass flux into Colby Lake	M_cl =	5,223.5957 (mg/s)
Convert mass flux to concentration	Average Flow		
	concentration in river at SW-001	C_r1 =	1.36386 (mg/L)
	concentration in river at SW-002	C_r2 =	1.51474 (mg/L)
	concentration in river at SW-003	C_r3 =	1.53594 (mg/L)
	concentration in river at SW-004	C_r4 =	1.57032 (mg/L)
	concentration in river at SW-004A	C_r4A =	1.62404 (mg/L)
	concentration in river at SW-005	C_r5 =	1.64717 (mg/L)
	concentration in river at USGS Gage	C_r6 =	1.65155 (mg/L)
	concentration in Colby Lake	C_cl =	1.65299 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case Parameter	Year 10 Hardness		
Input concentration data	concentration of surface water into SW-001	C_s1 =	110.0000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	110.0000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	110.0000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	110.0000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	110.0000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	110.0000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	110.0000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	110.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	110.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	110.0000 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	66.4200 (mg/L)
	concentration of ground water into SW-002	C_g2 =	66.4200 (mg/L)
	concentration of ground water into SW-003	C_g3 =	66.4200 (mg/L)
	concentration of ground water into SW-004	C_g4 =	66.4200 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	66.4200 (mg/L)
	concentration of ground water into SW-005	C_g5 =	66.4200 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	66.4200 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	66.4200 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	984.7056 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	4,360.9978 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	5,435.6906 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	4,069.1046 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	893.6117 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	43.5200 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	71.5000 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	984.7056 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	4,360.9978 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	5,435.6906 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	4,069.1046 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	893.6117 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	43.5200 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	66.4200 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	66.4200 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	66.4200 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	2,740.0000 (mg/L)
Convert concentration to mass flux	Average Flow		
	mass flux of surface water into SW-001	M_s1 =	14,072.03511 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	338.34348 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	3,113.00000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	16,385.00801 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	581.55406 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	4,788.95337 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	196.76471 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	4.09229 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.93545 (mg/s)
	mass flux of liner leakage from cat 3 sumps to SW-003	M_gC3s_003 =	0.00229 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	18,015.02242 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	581.91110 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.93545 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.65123 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.19225 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	94.18314 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00534 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00185 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00081 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	23.28806 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.02527 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.05414 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00002 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	2.28253 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	72,349.19705 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	2,602.05112 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	148.93703 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.02158 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	136.17695 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	112,434.07948 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	4,266.88722 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	12,078.18158 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	883.45242 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	73,342.28000 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	2,199.23262 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	1,214.07000 (mg/s)
Mass balance at each node	Average Flow		
	mass flux in river at SW-001	M_r1 =	17,523.3786 (mg/s)
	mass flux in river at SW-002	M_r2 =	34,489.9407 (mg/s)
	mass flux in river at SW-003	M_r3 =	39,480.6888 (mg/s)
	mass flux in river at SW-004	M_r4 =	58,199.2424 (mg/s)
	mass flux in river at SW-004A	M_r4A =	133,435.6261 (mg/s)
	mass flux in river at SW-005	M_r5 =	250,136.5928 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	263,098.2268 (mg/s)
	mass flux into Colby Lake	M_cl =	339,853.8094 (mg/s)
Convert mass flux to concentration	Average Flow		
	concentration in river at SW-001	C_r1 =	108.62389 (mg/L)
	concentration in river at SW-002	C_r2 =	108.10812 (mg/L)
	concentration in river at SW-003	C_r3 =	108.00902 (mg/L)
	concentration in river at SW-004	C_r4 =	107.62346 (mg/L)
	concentration in river at SW-004A	C_r4A =	107.63379 (mg/L)
	concentration in river at SW-005	C_r5 =	107.53532 (mg/L)
	concentration in river at USGS Gage	C_r6 =	107.42253 (mg/L)
	concentration in Colby Lake	C_cl =	107.54573 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case		Year 10	
Parameter		Potassium	
Input concentration data	concentration of surface water into SW-001	C_s1 =	1.3000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	1.3000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	1.3000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	1.3000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	1.3000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	1.3000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	1.3000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	1.3000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	1.3000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	2.7000 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	1.7500 (mg/L)
	concentration of ground water into SW-002	C_g2 =	1.7500 (mg/L)
	concentration of ground water into SW-003	C_g3 =	1.7500 (mg/L)
	concentration of ground water into SW-004	C_g4 =	1.7500 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	1.7500 (mg/L)
	concentration of ground water into SW-005	C_g5 =	1.7500 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	1.7500 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	1.7500 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	49.0000 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	38.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	38.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	38.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	38.0000 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	2.2600 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	4.4500 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	49.0000 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	38.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	38.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	38.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	38.0000 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	2.2600 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	1.7500 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	1.7500 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	1.7500 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	36.1000 (mg/L)
		Average Flow	
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	166.30587 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	8.91450 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	76.41000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	193.64100 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	15.32249 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	56.59672 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	5.18426 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.03566 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00654 (mg/s)
	mass flux of liner leakage from cat 3 sumps to SW-003	M_gC3s_003 =	0.00002 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	212.90481 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	15.33189 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00654 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00608 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00818 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	4.89094 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00004 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00002 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00003 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	1.20935 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00067 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00143 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.03007 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	855.03597 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	68.55750 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	7.41127 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00107 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	8.47535 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	1,328.76639 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	112.42175 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	142.74215 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	23.27675 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	866.77240 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	57.94425 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	14.34810 (mg/s)
		Average Flow	
Mass balance at each node	mass flux in river at SW-001	M_r1 =	251.6304 (mg/s)
	mass flux in river at SW-002	M_r2 =	460.5939 (mg/s)
	mass flux in river at SW-003	M_r3 =	522.4171 (mg/s)
	mass flux in river at SW-004	M_r4 =	756.8071 (mg/s)
	mass flux in river at SW-004A	M_r4A =	1,696.2883 (mg/s)
	mass flux in river at SW-005	M_r5 =	3,137.4764 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	3,303.4953 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	4,242.5601 (mg/s)
			Average Flow
	concentration in river at SW-001	C_r1 =	1.55981 (mg/L)
	concentration in river at SW-002	C_r2 =	1.44372 (mg/L)
	concentration in river at SW-003	C_r3 =	1.42920 (mg/L)
	concentration in river at SW-004	C_r4 =	1.39951 (mg/L)
	concentration in river at SW-004A	C_r4A =	1.36828 (mg/L)
	concentration in river at SW-005	C_r5 =	1.34882 (mg/L)
	concentration in river at USGS Gage	C_r6 =	1.34881 (mg/L)
	concentration in Colby Lake	C_cl =	1.34255 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case		Year 10	
Parameter		Magnesium	
Input concentration data	concentration of surface water into SW-001	C_s1 =	8.0000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	8.0000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	8.0000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	8.0000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	8.0000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	8.0000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	8.0000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	8.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	8.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	10.5000 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	8.0200 (mg/L)
	concentration of ground water into SW-002	C_g2 =	8.0200 (mg/L)
	concentration of ground water into SW-003	C_g3 =	8.0200 (mg/L)
	concentration of ground water into SW-004	C_g4 =	8.0200 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	8.0200 (mg/L)
	concentration of ground water into SW-005	C_g5 =	8.0200 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	8.0200 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	8.0200 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	55.1592 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	768.8496 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	1,030.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	697.9196 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	141.5184 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	4.8800 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	9.0100 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	55.1592 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	768.8496 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	1,030.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	697.9196 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	141.5184 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	4.8800 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	8.0200 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	8.0200 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	8.0200 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	438.0000 (mg/L)
Convert concentration to mass flux			Average Flow
	mass flux of surface water into SW-001	M_s1 =	1,023.42074 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	40.85388 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	297.15000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	1,191.63695 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	70.22077 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	348.28752 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	23.75870 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.72148 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00	0.17726 (mg/s)
	mass flux of liner leakage from cat 3 sumps to SW-003	M_gC3s_003	0.00040 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	1,310.18345 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	70.26388 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00	0.17726 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.11170 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.03045 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	10.56098 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0	0.00101 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00032 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00013 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	2.61135 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00305 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00654 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.36487 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	5,261.75979 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	314.18925 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	8.34285 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00121 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	17.16020 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	8,177.02396 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	515.21282 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	878.41321 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	106.67402 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	5,333.98400 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	265.55022 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	88.29600 (mg/s)
Mass balance at each node			Average Flow
	mass flux in river at SW-001	M_r1 =	1,361.4248 (mg/s)
	mass flux in river at SW-002	M_r2 =	2,623.2823 (mg/s)
	mass flux in river at SW-003	M_r3 =	2,996.2277 (mg/s)
	mass flux in river at SW-004	M_r4 =	4,390.5427 (mg/s)
	mass flux in river at SW-004A	M_r4A =	9,991.9960 (mg/s)
	mass flux in river at SW-005	M_r5 =	18,684.2327 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	19,669.3200 (mg/s)
	mass flux into Colby Lake	M_cl =	25,357.1502 (mg/s)
Convert mass flux to concentration			Average Flow
	concentration in river at SW-001	C_r1 =	8.43920 (mg/L)
	concentration in river at SW-002	C_r2 =	8.22263 (mg/L)
	concentration in river at SW-003	C_r3 =	8.19691 (mg/L)
	concentration in river at SW-004	C_r4 =	8.11910 (mg/L)
	concentration in river at SW-004A	C_r4A =	8.05989 (mg/L)
	concentration in river at SW-005	C_r5 =	8.03247 (mg/L)
	concentration in river at USGS Gage	C_r6 =	8.03095 (mg/L)
	concentration in Colby Lake	C_cl =	8.02420 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case		Year 10	
Parameter		Manganese	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.1500 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.1500 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.1500 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.1500 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.1500 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.1500 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.1500 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.1500 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.1500 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0086 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.1240 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.1240 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.1240 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.1240 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.1240 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.1240 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.1240 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.1240 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.4138 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	47.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	47.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	47.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	9.9334 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.1604 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.1160 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.4138 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	47.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	47.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	47.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	9.9334 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.1604 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.1240 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.1240 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.1240 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	20.1000 (mg/L)
		Average Flow	
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	19.18914 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.63166 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.24338 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	22.34319 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	1.08571 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	6.53039 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.36734 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.04410 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00809 (mg/s)
	mass flux of liner leakage from cat 3 sumps to SW-003	M_gC3s_003 =	0.00002 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	24.56594 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	1.08637 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00809 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00752 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00214 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.34711 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00005 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00002 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00001 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.08583 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00005 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00010 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.01674 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	98.65800 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	4.85779 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.06259 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.22093 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	153.31920 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	7.96588 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	16.47025 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	1.64932 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	100.01220 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	4.10576 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	1.65555 (mg/s)
		Average Flow	
Mass balance at each node	mass flux in river at SW-001	M_r1 =	20.0642 (mg/s)
	mass flux in river at SW-002	M_r2 =	43.4931 (mg/s)
	mass flux in river at SW-003	M_r3 =	50.4430 (mg/s)
	mass flux in river at SW-004	M_r4 =	78.5630 (mg/s)
	mass flux in river at SW-004A	M_r4A =	180.3623 (mg/s)
	mass flux in river at SW-005	M_r5 =	341.6474 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	359.7670 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	465.5405 (mg/s)
			Average Flow
	concentration in river at SW-001	C_r1 =	0.12437 (mg/L)
	concentration in river at SW-002	C_r2 =	0.13633 (mg/L)
	concentration in river at SW-003	C_r3 =	0.13800 (mg/L)
	concentration in river at SW-004	C_r4 =	0.14158 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.14549 (mg/L)
	concentration in river at SW-005	C_r5 =	0.14688 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.14689 (mg/L)
	concentration in Colby Lake	C_cl =	0.14732 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case	Year 10			
Parameter	Sodium			
Input concentration data	concentration of surface water into SW-001	C s1 =	2.5000	(mg/L)
	concentration of surface water into SW-002	C s2 =	2.5000	(mg/L)
	concentration of surface water into SW-003	C s3 =	2.5000	(mg/L)
	concentration of surface water into SW-004	C s4 =	2.5000	(mg/L)
	concentration of surface water into SW-004A	C s4A =	2.5000	(mg/L)
	concentration of surface water into SW-005	C s5 =	2.5000	(mg/L)
	concentration of surface water into USGS Gage	C s6 =	2.5000	(mg/L)
	concentration of surface water into Colby Lake	C scl =	2.5000	(mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	2.5000	(mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	4.8000	(mg/L)
	concentration of West Pit overflow	C sms =	#N/A	(mg/L)
	concentration of ground water into SW-001	C g1 =	13.3300	(mg/L)
	concentration of ground water into SW-002	C g2 =	13.3300	(mg/L)
	concentration of ground water into SW-003	C g3 =	13.3300	(mg/L)
	concentration of ground water into SW-004	C g4 =	13.3300	(mg/L)
	concentration of ground water into SW-004A	C g4A =	13.3300	(mg/L)
	concentration of ground water into SW-005	C g5 =	13.3300	(mg/L)
	concentration of ground water into USGS Gage	C g6 =	13.3300	(mg/L)
	concentration of ground water into Colby Lake	C gcl =	13.3300	(mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A	(mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A	(mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	309.2227	(mg/L)
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	338.0000	(mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	338.0000	(mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	263.7173	(mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	53.4744	(mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	4.6000	(mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	7.1900	(mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	309.2227	(mg/L)
	concentration of liner leakage from Cat 3 sumps	C gC3s =	338.0000	(mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	338.0000	(mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	263.7173	(mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	53.4744	(mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	4.6000	(mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A	(mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	13.3300	(mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	13.3300	(mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	13.3300	(mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	255.0000	(mg/L)
		Average Flow		
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	319.81898	(mg/s)
	mass flux of ground water into SW-001	M g1 =	67.90302	(mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	135.84000	(mg/s)
	mass flux of surface water into SW-002	M s2 =	372.38655	(mg/s)
	mass flux of ground water into SW-002	M g2 =	116.71358	(mg/s)
	mass flux of surface water into SW-003	M s3 =	108.83985	(mg/s)
	mass flux of ground water into SW-003	M g3 =	39.48921	(mg/s)
	mass flux of seepage from East Pit to SW-003	M gep 003 =	#N/A	(mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M gC3 003 =	0.31717	(mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO 00	0.05817	(mg/s)
	mass flux of liner leakage from cat 3 sumps to SW-003	M gC3s 003	0.00018	(mg/s)
	mass flux of surface water into SW-004	M s4 =	409.43233	(mg/s)
	mass flux of ground water into SW-004	M g4 =	116.78523	(mg/s)
	mass flux of seepage from East Pit to SW-004	M gep 004 =	#N/A	(mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A	(mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M gC3 004 =	-	(mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO 00	0.05817	(mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.04221	(mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.01150	(mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	9.95502	(mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs 0	0.00033	(mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00012	(mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00005	(mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	2.46151	(mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00507	(mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.01087	(mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000	(mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.21242	(mg/s)
	mass flux of surface water into SW-004A	M s4A =	1,644.29993	(mg/s)
	mass flux of ground water into SW-004A	M g4A =	522.21231	(mg/s)
	mass flux of West Pit overflow	M sms =	#N/A	(mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M gC12 =	46.77003	(mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M gC12s =	0.00678	(mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M gO12 =	13.69388	(mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A	(mg/s)
	mass flux of surface water into SW-005	M s5 =	2,555.31999	(mg/s)
	mass flux of ground water into SW-005	M g5 =	856.33253	(mg/s)
	mass flux of surface water into USGS Gage	M s6 =	274.50413	(mg/s)
	mass flux of ground water into USGS Gage	M g6 =	177.30233	(mg/s)
	mass flux of surface water into Colby Lake	M scl =	1,666.87000	(mg/s)
	mass flux of ground water into Colby Lake	M gcl =	441.36963	(mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl =	27.59250	(mg/s)
Mass balance at each node	Average Flow			
	mass flux in river at SW-001	M r1 =	523.5620	(mg/s)
	mass flux in river at SW-002	M r2 =	1,012.6621	(mg/s)
	mass flux in river at SW-003	M r3 =	1,161.3667	(mg/s)
	mass flux in river at SW-004	M r4 =	1,700.3415	(mg/s)
	mass flux in river at SW-004A	M r4A =	3,927.3245	(mg/s)
	mass flux in river at SW-005	M r5 =	7,338.9770	(mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M r6 =	7,790.7834	(mg/s)
	mass flux into Colby Lake	M cl =	9,926.6156	(mg/s)
Average Flow				
concentration in river at SW-001	C r1 =	3.24546	(mg/L)	
concentration in river at SW-002	C r2 =	3.17417	(mg/L)	
concentration in river at SW-003	C r3 =	3.17720	(mg/L)	
concentration in river at SW-004	C r4 =	3.14431	(mg/L)	
concentration in river at SW-004A	C r4A =	3.16792	(mg/L)	
concentration in river at SW-005	C r5 =	3.15507	(mg/L)	
concentration in river at USGS Gage	C r6 =	3.18096	(mg/L)	
concentration in Colby Lake	C cl =	3.14125	(mg/L)	

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case	Year 10				
Parameter	Nickel				
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0016	(mg/L)	
	concentration of surface water into SW-002	C_s2 =	0.0016	(mg/L)	
	concentration of surface water into SW-003	C_s3 =	0.0016	(mg/L)	
	concentration of surface water into SW-004	C_s4 =	0.0016	(mg/L)	
	concentration of surface water into SW-004A	C_s4A =	0.0016	(mg/L)	
	concentration of surface water into SW-005	C_s5 =	0.0016	(mg/L)	
	concentration of surface water into USGS Gage	C_s6 =	0.0016	(mg/L)	
	concentration of surface water into Colby Lake	C_scl =	0.0016	(mg/L)	
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0033	(mg/L)	
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0016	(mg/L)	
	concentration of West Pit overflow	C_sms =	#N/A	(mg/L)	
	concentration of ground water into SW-001	C_g1 =	0.0163	(mg/L)	
	concentration of ground water into SW-002	C_g2 =	0.0163	(mg/L)	
	concentration of ground water into SW-003	C_g3 =	0.0163	(mg/L)	
	concentration of ground water into SW-004	C_g4 =	0.0163	(mg/L)	
	concentration of ground water into SW-004A	C_g4A =	0.0163	(mg/L)	
	concentration of ground water into SW-005	C_g5 =	0.0163	(mg/L)	
	concentration of ground water into USGS Gage	C_g6 =	0.0163	(mg/L)	
	concentration of ground water into Colby Lake	C_gcl =	0.0163	(mg/L)	
	concentration of ground water seepage from East Pit	C_gep =	#N/A	(mg/L)	
	concentration of ground water seepage from West Pit	C_gwp =	#N/A	(mg/L)	
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.1228	(mg/L)	
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	428.8574	(mg/L)	
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	715.9131	(mg/L)	
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	264.7660	(mg/L)	
	concentration of liner leakage from LOSP	C_gC4LO =	53.6871	(mg/L)	
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0080	(mg/L)	
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0190	(mg/L)	
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.1228	(mg/L)	
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	428.8574	(mg/L)	
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	715.9131	(mg/L)	
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	264.7660	(mg/L)	
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	53.6871	(mg/L)	
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0080	(mg/L)	
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A	(mg/L)	
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0163	(mg/L)	
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0163	(mg/L)	
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0163	(mg/L)	
	concentration of liner leakage from WWTF pond	C_gWTFp =	138.0000	(mg/L)	
	Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	0.19957	(mg/s)
		mass flux of ground water into SW-001	M_g1 =	0.08293	(mg/s)
mass flux of surface discharges from upstream of PM-1		M_sns =	0.04387	(mg/s)	
mass flux of surface water into SW-002		M_s2 =	0.23237	(mg/s)	
mass flux of ground water into SW-002		M_g2 =	0.14254	(mg/s)	
mass flux of surface water into SW-003		M_s3 =	0.06792	(mg/s)	
mass flux of ground water into SW-003		M_g3 =	0.04823	(mg/s)	
mass flux of seepage from East Pit to SW-003		M_gep_003 =	#N/A	(mg/s)	
mass flux of liner leakage from Cat 3 stockpile to SW-003		M_gC3_003 =	0.40243	(mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-003		M_gC3LO_003 =	0.12320	(mg/s)	
mass flux of liner leakage from cat 3 sumps to SW-003		M_gC3s_003 =	0.00023	(mg/s)	
mass flux of surface water into SW-004		M_s4 =	0.25549	(mg/s)	
mass flux of ground water into SW-004		M_g4 =	0.14263	(mg/s)	
mass flux of seepage from East Pit to SW-004		M_gep_004 =	#N/A	(mg/s)	
mass flux of seepage from West Pit		M_gwp =	#N/A	(mg/s)	
mass flux of liner leakage from Cat 3 stockpile to SW-004		M_gC3_004 =	-	(mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-004		M_gC3LO_004 =	0.12320	(mg/s)	
mass flux of liner leakage from Cat 4 stockpile		M_gC4 =	0.04237	(mg/s)	
mass flux of liner leakage from LOSP		M_gC4LO =	0.01155	(mg/s)	
mass flux of seepage from Overburden (Storage)		M_gOS =	0.01725	(mg/s)	
mass flux of liner leakage from Cat 3LO sumps to SW-004		M_gC3LOs_004 =	0.00070	(mg/s)	
mass flux of liner leakage from Cat 4 sumps		M_gC4s =	0.00012	(mg/s)	
mass flux of liner leakage from LOSP sumps		M_gC4LOs =	0.00005	(mg/s)	
mass flux of seepage from Overburden Ponds - PW1		M_gOp1 =	0.00426	(mg/s)	
mass flux of leakage from Haul Road Pond - PW2		M_gHRp2 =	0.00001	(mg/s)	
mass flux of leakage from Haul Road Pond - PW4		M_gHRp4 =	0.00001	(mg/s)	
mass flux of leakage from RTH Pond - PW3		M_gRTHp =	0.00000	(mg/s)	
mass flux of liner leakage from WWTF pond		M_gWTFp =	0.11496	(mg/s)	
mass flux of surface water into SW-004A		M_s4A =	1.02604	(mg/s)	
mass flux of ground water into SW-004A		M_g4A =	0.63778	(mg/s)	
mass flux of West Pit overflow		M_sms =	#N/A	(mg/s)	
mass flux of liner leakage from Cat 1/2 stockpile		M_gC12 =	0.01857	(mg/s)	
mass flux of liner leakage from Cat 1/2 sumps		M_gC12s =	0.00000	(mg/s)	
mass flux of seepage from Overburden (Cat 1/2)		M_gO12 =	0.03619	(mg/s)	
mass flux of seepage from Overburden Pond - PW7		M_gOp7 =	#N/A	(mg/s)	
mass flux of surface water into SW-005		M_s5 =	1.59452	(mg/s)	
mass flux of ground water into SW-005		M_g5 =	1.04584	(mg/s)	
mass flux of surface water into USGS Gage		M_s6 =	0.17129	(mg/s)	
mass flux of ground water into USGS Gage		M_g6 =	0.21654	(mg/s)	
mass flux of surface water into Colby Lake		M_scl =	1.04013	(mg/s)	
mass flux of ground water into Colby Lake		M_gcl =	0.53905	(mg/s)	
mass flux of surface water from Hoyt Lakes WWTP		M_shl =	0.03642	(mg/s)	
Mass balance at each node	mass flux in river at SW-001	M_r1 =	0.3264	(mg/s)	
	mass flux in river at SW-002	M_r2 =	0.7013	(mg/s)	
	mass flux in river at SW-003	M_r3 =	1.3433	(mg/s)	
	mass flux in river at SW-004	M_r4 =	2.0559	(mg/s)	
	mass flux in river at SW-004A	M_r4A =	3.7745	(mg/s)	
	mass flux in river at SW-005	M_r5 =	6.4148	(mg/s)	
	mass flux in river at USGS Gage	M_r6 =	6.8027	(mg/s)	
mass flux into Colby Lake	M_cl =	8.4183	(mg/s)		
Convert mass flux to concentration	concentration in river at SW-001	C_r1 =	0.00202	(mg/L)	
	concentration in river at SW-002	C_r2 =	0.00220	(mg/L)	
	concentration in river at SW-003	C_r3 =	0.00367	(mg/L)	
	concentration in river at SW-004	C_r4 =	0.00380	(mg/L)	
	concentration in river at SW-004A	C_r4A =	0.00304	(mg/L)	
	concentration in river at SW-005	C_r5 =	0.00276	(mg/L)	
	concentration in river at USGS Gage	C_r6 =	0.00278	(mg/L)	
	concentration in Colby Lake	C_cl =	0.00266	(mg/L)	

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case Parameter	Year 10 Lead		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0005 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0005 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0005 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0005 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0005 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0005 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0005 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0005 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0005 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0002 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0011 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0011 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0011 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0011 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0011 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0011 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0011 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0011 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0147 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.0528 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0528 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0528 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0528 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0007 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0147 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.0528 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0528 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0528 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0528 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0007 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0011 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0011 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0011 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0400 (mg/L)
Convert concentration to mass flux	Average Flow		
	mass flux of surface water into SW-001	M_s1 =	0.06396 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00571 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.00425 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	0.07448 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.00981 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.02177 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00332 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00005 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00001 (mg/s)
	mass flux of liner leakage from cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.08189 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.00981 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00001 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00146 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00036 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00003 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	0.32886 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.04388 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.00222 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	0.51106 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.07195 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.05490 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.01490 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	0.33337 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.03708 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00552 (mg/s)
Mass balance at each node	Average Flow		
	mass flux in river at SW-001	M_r1 =	0.0739 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.1582 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.1833 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.2769 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.6519 (mg/s)
	mass flux in river at SW-005	M_r5 =	1.2349 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	1.3047 (mg/s)
	mass flux into Colby Lake	M_cl =	1.6807 (mg/s)
	Average Flow		
	concentration in river at SW-001	C_r1 =	0.00046 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00050 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00050 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00051 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00053 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00053 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00053 (mg/L)
	concentration in Colby Lake	C_cl =	0.00053 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case	Year 10			
Parameter	Antimony			
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0015 (mg/L)	
	concentration of surface water into SW-002	C s2 =	0.0015 (mg/L)	
	concentration of surface water into SW-003	C s3 =	0.0015 (mg/L)	
	concentration of surface water into SW-004	C s4 =	0.0015 (mg/L)	
	concentration of surface water into SW-004A	C s4A =	0.0015 (mg/L)	
	concentration of surface water into SW-005	C s5 =	0.0015 (mg/L)	
	concentration of surface water into USGS Gage	C s6 =	0.0015 (mg/L)	
	concentration of surface water into Colby Lake	C scl =	0.0015 (mg/L)	
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0015 (mg/L)	
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0015 (mg/L)	
	concentration of West Pit overflow	C sms =	#N/A (mg/L)	
	concentration of ground water into SW-001	C g1 =	0.0015 (mg/L)	
	concentration of ground water into SW-002	C g2 =	0.0015 (mg/L)	
	concentration of ground water into SW-003	C g3 =	0.0015 (mg/L)	
	concentration of ground water into SW-004	C g4 =	0.0015 (mg/L)	
	concentration of ground water into SW-004A	C g4A =	0.0015 (mg/L)	
	concentration of ground water into SW-005	C g5 =	0.0015 (mg/L)	
	concentration of ground water into USGS Gage	C g6 =	0.0015 (mg/L)	
	concentration of ground water into Colby Lake	C gcl =	0.0015 (mg/L)	
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)	
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)	
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	0.0800 (mg/L)	
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	0.0800 (mg/L)	
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0800 (mg/L)	
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0800 (mg/L)	
	concentration of liner leakage from LOSP	C gC4LO =	0.0225 (mg/L)	
	concentration of seepage from Overburden (Storage)	C gOS =	0.0003 (mg/L)	
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	0.0004 (mg/L)	
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	0.0800 (mg/L)	
	concentration of liner leakage from Cat 3 sumps	C gC3s =	0.0800 (mg/L)	
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.0800 (mg/L)	
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0800 (mg/L)	
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0225 (mg/L)	
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0003 (mg/L)	
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)	
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0015 (mg/L)	
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0015 (mg/L)	
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0015 (mg/L)	
	concentration of liner leakage from WWTF ponc	C_gWTFp =	0.0816 (mg/L)	
			Average Flow	
	Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	0.19189 (mg/s)
mass flux of ground water into SW-001		M g1 =	0.00764 (mg/s)	
mass flux of surface discharges from upstream of PM-1		M sns =	0.04245 (mg/s)	
mass flux of surface water into SW-002		M s2 =	0.22343 (mg/s)	
mass flux of ground water into SW-002		M g2 =	0.01313 (mg/s)	
mass flux of surface water into SW-003		M s3 =	0.06530 (mg/s)	
mass flux of ground water into SW-003		M g3 =	0.00444 (mg/s)	
mass flux of seepage from East Pit to SW-003		M gep 003 =	#N/A (mg/s)	
mass flux of liner leakage from Cat 3 stockpile to SW-003		M gC3 003 =	0.00008 (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-003		M gC3LO 00 =	0.00001 (mg/s)	
mass flux of liner leakage from cat 3 sumps to SW-003		M gC3s 003 =	0.00000 (mg/s)	
mass flux of surface water into SW-004		M s4 =	0.24566 (mg/s)	
mass flux of ground water into SW-004		M g4 =	0.01314 (mg/s)	
mass flux of seepage from East Pit to SW-004		M gep 004 =	#N/A (mg/s)	
mass flux of seepage from West Pit		M gwp =	#N/A (mg/s)	
mass flux of liner leakage from Cat 3 stockpile to SW-004		M gC3 004 =	- (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-004		M gC3LO 00 =	0.00001 (mg/s)	
mass flux of liner leakage from Cat 4 stockpile		M gC4 =	0.00001 (mg/s)	
mass flux of liner leakage from LOSP		M gC4LO =	0.00000 (mg/s)	
mass flux of seepage from Overburden (Storage)		M gOS =	0.00065 (mg/s)	
mass flux of liner leakage from Cat 3LO sumps to SW-004		M gC3LOs 0 =	0.00000 (mg/s)	
mass flux of liner leakage from Cat 4 sumps		M gC4s =	0.00000 (mg/s)	
mass flux of liner leakage from LOSP sumps		M gC4LOs =	0.00000 (mg/s)	
mass flux of seepage from Overburden Ponds - PW1		M gOp1 =	0.00016 (mg/s)	
mass flux of leakage from Haul Road Pond - PW2		M gHRp2 =	0.00000 (mg/s)	
mass flux of leakage from Haul Road Pond - PW4		M gHRp4 =	0.00000 (mg/s)	
mass flux of leakage from RTH Pond - PW3		M gRTHp =	0.00000 (mg/s)	
mass flux of liner leakage from WWTF pond		M gWTFp =	0.00007 (mg/s)	
mass flux of surface water into SW-004A		M s4A =	0.98658 (mg/s)	
mass flux of ground water into SW-004A		M g4A =	0.05876 (mg/s)	
mass flux of West Pit overflow		M sms =	#N/A (mg/s)	
mass flux of liner leakage from Cat 1/2 stockpile		M gC12 =	0.01210 (mg/s)	
mass flux of liner leakage from Cat 1/2 sumps		M gC12s =	0.00000 (mg/s)	
mass flux of seepage from Overburden (Cat 1/2)		M gO12 =	0.00076 (mg/s)	
mass flux of seepage from Overburden Pond - PW7		M gOp7 =	#N/A (mg/s)	
mass flux of surface water into SW-005		M s5 =	1.53319 (mg/s)	
mass flux of ground water into SW-005		M g5 =	0.09636 (mg/s)	
mass flux of surface water into USGS Gage		M s6 =	0.16470 (mg/s)	
mass flux of ground water into USGS Gage		M g6 =	0.01995 (mg/s)	
mass flux of surface water into Colby Lake		M scl =	1.00012 (mg/s)	
mass flux of ground water into Colby Lake		M gcl =	0.04967 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP		M shl =	0.01656 (mg/s)	
Mass balance at each node	mass flux in river at SW-001	M r1 =	0.2420 (mg/s)	
	mass flux in river at SW-002	M r2 =	0.4785 (mg/s)	
	mass flux in river at SW-003	M r3 =	0.5484 (mg/s)	
	mass flux in river at SW-004	M r4 =	0.8081 (mg/s)	
	mass flux in river at SW-004A	M r4A =	1.8663 (mg/s)	
	mass flux in river at SW-005	M r5 =	3.4959 (mg/s)	
	mass flux in river at USGS Gage	M r6 =	3.6805 (mg/s)	
Convert mass flux to concentration	mass flux into Colby Lake	M cl =	4.7469 (mg/s)	
	concentration in river at SW-001	C r1 =	0.00150 (mg/L)	
	concentration in river at SW-002	C r2 =	0.00150 (mg/L)	
	concentration in river at SW-003	C r3 =	0.00150 (mg/L)	
	concentration in river at SW-004	C r4 =	0.00149 (mg/L)	
	concentration in river at SW-004A	C r4A =	0.00151 (mg/L)	
	concentration in river at SW-005	C r5 =	0.00150 (mg/L)	
	concentration in river at USGS Gage	C r6 =	0.00150 (mg/L)	
	concentration in Colby Lake	C cl =	0.00150 (mg/L)	



Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case		Year 10	
Parameter		Selenium	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0005 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0005 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0005 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0005 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0005 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0005 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0005 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0005 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0005 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0005 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0019 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0019 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0019 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0019 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0019 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0019 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0019 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0019 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0029 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.0029 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0029 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0029 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0029 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0004 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0019 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0029 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.0029 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0029 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0029 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0029 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0004 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0019 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0019 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0019 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0100 (mg/L)
		Average Flow	
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	0.06396 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00973 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.01415 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	0.07448 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.01672 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.02177 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00566 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00000 (mg/s)
	mass flux of liner leakage from cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.08189 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.01673 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00096 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00024 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00001 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	0.32886 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.07483 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.00044 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.00362 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	0.51106 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.12270 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.05490 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.02540 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	0.33337 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.06324 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00552 (mg/s)
		Average Flow	
Mass balance at each node	mass flux in river at SW-001	M_r1 =	0.0878 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.1790 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.2065 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.3063 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.7140 (mg/s)
	mass flux in river at SW-005	M_r5 =	1.3478 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	1.4281 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	1.8303 (mg/s)
			Average Flow
	concentration in river at SW-001	C_r1 =	0.00054 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00056 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00056 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00057 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00058 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00058 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00058 (mg/L)
	concentration in Colby Lake	C_cl =	0.00058 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case Parameter	Year 10 Sulfate		
Input concentration data	concentration of surface water into SW-001	C s1 =	9.0000 (mg/L)
	concentration of surface water into SW-002	C s2 =	9.0000 (mg/L)
	concentration of surface water into SW-003	C s3 =	9.0000 (mg/L)
	concentration of surface water into SW-004	C s4 =	9.0000 (mg/L)
	concentration of surface water into SW-004A	C s4A =	9.0000 (mg/L)
	concentration of surface water into SW-005	C s5 =	9.0000 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	9.0000 (mg/L)
	concentration of surface water into Colby Lake	C scl =	9.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	22.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	22.0000 (mg/L)
	concentration of West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	16.1300 (mg/L)
	concentration of ground water into SW-002	C g2 =	16.1300 (mg/L)
	concentration of ground water into SW-003	C g3 =	16.1300 (mg/L)
	concentration of ground water into SW-004	C g4 =	16.1300 (mg/L)
	concentration of ground water into SW-004A	C g4A =	16.1300 (mg/L)
	concentration of ground water into SW-005	C g5 =	16.1300 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	16.1300 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	16.1300 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	683.5945 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	9,600.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	9,600.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	9,600.0000 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	5,614.1186 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	35.1700 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	68.3000 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	683.5945 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C gC3s =	9,600.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	9,600.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	9,600.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	5,614.1186 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	35.1700 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	16.1300 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	16.1300 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	16.1300 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	5,026.0000 (mg/L)
Convert concentration to mass flux	Average Flow		
	mass flux of surface water into SW-001	M s1 =	1,151.34833 (mg/s)
	mass flux of ground water into SW-001	M g1 =	82.16622 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	622.60000 (mg/s)
	mass flux of surface water into SW-002	M s2 =	1,340.59156 (mg/s)
	mass flux of ground water into SW-002	M g2 =	141.22956 (mg/s)
	mass flux of surface water into SW-003	M s3 =	391.82346 (mg/s)
	mass flux of ground water into SW-003	M g3 =	47.78402 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep 003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M gC3_003 =	9.00849 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_00 =	1.65210 (mg/s)
	mass flux of liner leakage from cat 3 sumps to SW-003	M gC3s_003 =	0.00505 (mg/s)
	mass flux of surface water into SW-004	M s4 =	1,473.95638 (mg/s)
	mass flux of ground water into SW-004	M g4 =	141.31626 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep 004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_00 =	1.65210 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	1.53641 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	1.20781 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	76.11262 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_0 =	0.00942 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00438 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00512 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	18.81988 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00614 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.01315 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	4.18685 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	5,919.47976 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	631.90432 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M gC12 =	103.39389 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M gC12s =	0.01498 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M gO12 =	130.08232 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	9,199.15196 (mg/s)
	mass flux of ground water into SW-005	M g5 =	1,036.20733 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	988.21486 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	214.54513 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	6,000.73200 (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	534.08043 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl =	99.33300 (mg/s)
Mass balance at each node	Average Flow		
	mass flux in river at SW-001	M r1 =	1,856.1145 (mg/s)
	mass flux in river at SW-002	M r2 =	3,337.9357 (mg/s)
	mass flux in river at SW-003	M r3 =	3,788.2088 (mg/s)
	mass flux in river at SW-004	M r4 =	5,507.0353 (mg/s)
	mass flux in river at SW-004A	M r4A =	12,291.9106 (mg/s)
	mass flux in river at SW-005	M r5 =	22,527.2698 (mg/s)
	mass flux in river at USGS Gage	M r6 =	23,730.0298 (mg/s)
	mass flux into Colby Lake	M cl =	30,364.1753 (mg/s)
Convert mass flux to concentration	Average Flow		
	concentration in river at SW-001	C r1 =	11.50568 (mg/L)
	concentration in river at SW-002	C r2 =	10.46270 (mg/L)
	concentration in river at SW-003	C r3 =	10.36357 (mg/L)
	concentration in river at SW-004	C r4 =	10.18374 (mg/L)
	concentration in river at SW-004A	C r4A =	9.91508 (mg/L)
	concentration in river at SW-005	C r5 =	9.68462 (mg/L)
	concentration in river at USGS Gage	C r6 =	9.68893 (mg/L)
	concentration in Colby Lake	C cl =	9.60865 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case	Year 10			
Parameter	Thallium			
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0004 (mg/L)	
	concentration of surface water into SW-002	C s2 =	0.0004 (mg/L)	
	concentration of surface water into SW-003	C s3 =	0.0004 (mg/L)	
	concentration of surface water into SW-004	C s4 =	0.0004 (mg/L)	
	concentration of surface water into SW-004A	C s4A =	0.0004 (mg/L)	
	concentration of surface water into SW-005	C s5 =	0.0004 (mg/L)	
	concentration of surface water into USGS Gage	C s6 =	0.0004 (mg/L)	
	concentration of surface water into Colby Lake	C scl =	0.0004 (mg/L)	
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0004 (mg/L)	
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0003 (mg/L)	
	concentration of West Pit overflow	C sms =	#N/A (mg/L)	
	concentration of ground water into SW-001	C g1 =	0.0000 (mg/L)	
	concentration of ground water into SW-002	C g2 =	0.0000 (mg/L)	
	concentration of ground water into SW-003	C g3 =	0.0000 (mg/L)	
	concentration of ground water into SW-004	C g4 =	0.0000 (mg/L)	
	concentration of ground water into SW-004A	C g4A =	0.0000 (mg/L)	
	concentration of ground water into SW-005	C g5 =	0.0000 (mg/L)	
	concentration of ground water into USGS Gage	C g6 =	0.0000 (mg/L)	
	concentration of ground water into Colby Lake	C gcl =	0.0000 (mg/L)	
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)	
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)	
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	0.0000 (mg/L)	
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	0.0001 (mg/L)	
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0001 (mg/L)	
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0001 (mg/L)	
	concentration of liner leakage from LOSP	C gC4LO =	0.0001 (mg/L)	
	concentration of seepage from Overburden (Storage)	C gOS =	0.0000 (mg/L)	
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	- (mg/L)	
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	0.0000 (mg/L)	
	concentration of liner leakage from Cat 3 sumps	C gC3s =	0.0001 (mg/L)	
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.0001 (mg/L)	
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0001 (mg/L)	
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0001 (mg/L)	
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0000 (mg/L)	
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)	
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0000 (mg/L)	
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0000 (mg/L)	
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0000 (mg/L)	
	concentration of liner leakage from WWTF ponc	C_gWTFp =	0.0072 (mg/L)	
			Average Flow	
	Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	0.05117 (mg/s)
		mass flux of ground water into SW-001	M g1 =	0.00002 (mg/s)
mass flux of surface discharges from upstream of PM-1		M sns =	0.00809 (mg/s)	
mass flux of surface water into SW-002		M s2 =	0.05958 (mg/s)	
mass flux of ground water into SW-002		M g2 =	0.00004 (mg/s)	
mass flux of surface water into SW-003		M s3 =	0.01741 (mg/s)	
mass flux of ground water into SW-003		M g3 =	0.00001 (mg/s)	
mass flux of seepage from East Pit to SW-003		M gep 003 =	#N/A (mg/s)	
mass flux of liner leakage from Cat 3 stockpile to SW-003		M gC3 003 =	0.00000 (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-003		M gC3LO 00 =	0.00000 (mg/s)	
mass flux of liner leakage from cat 3 sumps to SW-003		M gC3s 003 =	0.00000 (mg/s)	
mass flux of surface water into SW-004		M s4 =	0.06551 (mg/s)	
mass flux of ground water into SW-004		M g4 =	0.00004 (mg/s)	
mass flux of seepage from East Pit to SW-004		M gep 004 =	#N/A (mg/s)	
mass flux of seepage from West Pit		M gwp =	#N/A (mg/s)	
mass flux of liner leakage from Cat 3 stockpile to SW-004		M gC3 004 =	- (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-004		M gC3LO 00 =	0.00000 (mg/s)	
mass flux of liner leakage from Cat 4 stockpile		M gC4 =	0.00000 (mg/s)	
mass flux of liner leakage from LOSP		M gC4LO =	0.00000 (mg/s)	
mass flux of seepage from Overburden (Storage)		M gOS =	0.00009 (mg/s)	
mass flux of liner leakage from Cat 3LO sumps to SW-004		M gC3LOs 0 =	0.00000 (mg/s)	
mass flux of liner leakage from Cat 4 sumps		M gC4s =	0.00000 (mg/s)	
mass flux of liner leakage from LOSP sumps		M gC4LOs =	0.00000 (mg/s)	
mass flux of seepage from Overburden Ponds - PW1		M gOp1 =	0.00002 (mg/s)	
mass flux of leakage from Haul Road Pond - PW2		M gHRp2 =	0.00000 (mg/s)	
mass flux of leakage from Haul Road Pond - PW4		M gHRp4 =	0.00000 (mg/s)	
mass flux of leakage from RTH Pond - PW3		M gRTHp =	0.00000 (mg/s)	
mass flux of liner leakage from WWTF pond		M gWTFp =	0.00001 (mg/s)	
mass flux of surface water into SW-004A		M s4A =	0.26309 (mg/s)	
mass flux of ground water into SW-004A		M g4A =	0.00016 (mg/s)	
mass flux of West Pit overflow		M sms =	#N/A (mg/s)	
mass flux of liner leakage from Cat 1/2 stockpile		M gC12 =	0.00000 (mg/s)	
mass flux of liner leakage from Cat 1/2 sumps		M gC12s =	0.00000 (mg/s)	
mass flux of seepage from Overburden (Cat 1/2)		M gO12 =	- (mg/s)	
mass flux of seepage from Overburden Pond - PW7		M gOp7 =	#N/A (mg/s)	
mass flux of surface water into SW-005		M s5 =	0.40885 (mg/s)	
mass flux of ground water into SW-005		M g5 =	0.00026 (mg/s)	
mass flux of surface water into USGS Gage		M s6 =	0.04392 (mg/s)	
mass flux of ground water into USGS Gage		M g6 =	0.00005 (mg/s)	
mass flux of surface water into Colby Lake		M scl =	0.26670 (mg/s)	
mass flux of ground water into Colby Lake		M gcl =	0.00013 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP		M shl =	0.00441 (mg/s)	
Mass balance at each node	Average Flow			
	mass flux in river at SW-001	M r1 =	0.0593 (mg/s)	
	mass flux in river at SW-002	M r2 =	0.1189 (mg/s)	
	mass flux in river at SW-003	M r3 =	0.1363 (mg/s)	
	mass flux in river at SW-004	M r4 =	0.2020 (mg/s)	
	mass flux in river at SW-004A	M r4A =	0.4652 (mg/s)	
	mass flux in river at SW-005	M r5 =	0.8743 (mg/s)	
	mass flux in river at USGS Gage	M r6 =	0.9183 (mg/s)	
	mass flux into Colby Lake	M cl =	1.1896 (mg/s)	
Convert mass flux to concentration	Average Flow			
	concentration in river at SW-001	C r1 =	0.00037 (mg/L)	
	concentration in river at SW-002	C r2 =	0.00037 (mg/L)	
	concentration in river at SW-003	C r3 =	0.00037 (mg/L)	
	concentration in river at SW-004	C r4 =	0.00037 (mg/L)	
	concentration in river at SW-004A	C r4A =	0.00038 (mg/L)	
	concentration in river at SW-005	C r5 =	0.00038 (mg/L)	
	concentration in river at USGS Gage	C r6 =	0.00037 (mg/L)	
	concentration in Colby Lake	C cl =	0.00038 (mg/L)	

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case		Year 10	
Parameter		Vanadium	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0009 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0009 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0009 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0009 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0009 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0009 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0009 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0009 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0009 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0043 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0043 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0043 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0043 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0043 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0043 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0043 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0043 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0043 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.4528 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	1.6257 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	2.7139 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0539 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0109 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0017 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0014 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.4528 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	1.6257 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	2.7139 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0539 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0109 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0017 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0043 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0043 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0043 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	2.5932 (mg/L)
		Average Flow	
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	0.11513 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.02190 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.12169 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	0.13406 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.03765 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.03918 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.01274 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00153 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00	0.00047 (mg/s)
	mass flux of liner leakage from cat 3 sumps to SW-003	M_gC3s_003	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.14740 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.03767 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00	0.00047 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00001 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00374 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00093 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00216 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	0.59195 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.16846 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.06848 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.00267 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	0.91992 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.27624 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.09882 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.05719 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	0.60007 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.14238 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00993 (mg/s)
		Average Flow	
Mass balance at each node	mass flux in river at SW-001	M_r1 =	0.2587 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.4304 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.4844 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.6767 (mg/s)
	mass flux in river at SW-004A	M_r4A =	1.5083 (mg/s)
	mass flux in river at SW-005	M_r5 =	2.7044 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	2.8605 (mg/s)
	mass flux into Colby Lake	M_cl =	3.6128 (mg/s)
		Average Flow	
Convert mass flux to concentration	concentration in river at SW-001	C_r1 =	0.00160 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00135 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00133 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00125 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00122 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00116 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00117 (mg/L)
	concentration in Colby Lake	C_cl =	0.00114 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case	Year 10		
Parameter	Zinc		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0160 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0160 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0160 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0160 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0160 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0160 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0160 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0160 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0620 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0073 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0275 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0275 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0275 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0275 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0275 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0275 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0275 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0275 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0900 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	23.0905 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	26.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	26.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	26.0000 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0046 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0030 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0900 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	23.0905 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_g3LOs =	26.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	26.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	26.0000 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0046 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0275 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0275 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0275 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	12.3000 (mg/L)
Convert concentration to mass flux	Average Flow		
	mass flux of surface water into SW-001	M_s1 =	2.04684 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.14009 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.20744 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	2.38327 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.24078 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.69658 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.08147 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.02167 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00447 (mg/s)
	mass flux of liner leakage from cat 3 sumps to SW-003	M_gC3s_003 =	0.00001 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	2.62037 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.24093 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00447 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00416 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00559 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00987 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00003 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00001 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00002 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00244 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00001 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00002 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.01025 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	10.52352 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	1.07733 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.01361 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.00571 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	16.35405 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	1.76663 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	1.75683 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.36578 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	10.66797 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.91055 (mg/s)
mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.68429 (mg/s)	
Mass balance at each node	Average Flow		
	mass flux in river at SW-001	M_r1 =	2.3944 (mg/s)
	mass flux in river at SW-002	M_r2 =	5.0184 (mg/s)
	mass flux in river at SW-003	M_r3 =	5.8226 (mg/s)
	mass flux in river at SW-004	M_r4 =	8.7208 (mg/s)
	mass flux in river at SW-004A	M_r4A =	20.3410 (mg/s)
	mass flux in river at SW-005	M_r5 =	38.4616 (mg/s)
mass flux in river at USGS Gage	M_r6 =	40.5843 (mg/s)	
mass flux into Colby Lake	M_cl =	52.8471 (mg/s)	
Convert mass flux to concentration	Average Flow		
	concentration in river at SW-001	C_r1 =	0.01484 (mg/L)
	concentration in river at SW-002	C_r2 =	0.01573 (mg/L)
	concentration in river at SW-003	C_r3 =	0.01593 (mg/L)
	concentration in river at SW-004	C_r4 =	0.01613 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.01641 (mg/L)
	concentration in river at SW-005	C_r5 =	0.01653 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.01657 (mg/L)
concentration in Colby Lake	C_cl =	0.01672 (mg/L)	

## Partridge River Mass-Balance--Mine Site-Proposed Action

### FLOWS

Case Flow	Year 10 High Flow Conditions			
Total flow in Partridge River	flow in river at SW-001	Q_r1_H =	85.35	(cfs)
	flow in river at SW-002	Q_r2_H =	172.42	(cfs)
	flow in river at SW-003	Q_r3_H =	227.73	(cfs)
	flow in river at SW-004	Q_r4_H =	284.59	(cfs)
	flow in river at SW-004A	Q_r4a_H =	920.06	(cfs)
	flow in river at SW-005	Q_r5_H =	1,084.84	(cfs)
	flow in river at USGS Gage	Q_r6_H =	1,086.25	(cfs)
	total flow into Colby Lake	Q_cl_H =	1,423.78	(cfs)
	flow check	Q_ck_H =	1,423.78	(cfs)
Input flow data	surface water flow into SW-001	Q_s1_H =	84.17	(cfs)
	surface water flow into SW-002	Q_s2_H =	86.76	(cfs)
	surface water flow into SW-003	Q_s3_H =	55.20	(cfs)
	surface water flow into SW-004	Q_s4_H =	56.45	(cfs)
	surface water flow into SW-004A	Q_s4a_H =	633.87	(cfs)
	surface water flow into SW-005	Q_s5_H =	162.51	(cfs)
	surface water flow into USGS Gage	Q_s6_H =	0.94	(cfs)
	surface water flow into Colby Lake	Q_scl_H =	335.97	(cfs)
	surface water inflow from Hoyt Lakes WWTP	Q_shl_H =	0.39	(cfs)
	surface water inflow from discharges upstream of PM-1	Q_sns_H =	1.00	(cfs)
	surface water flow from West Pit overflow	Q_sms_H =	-	(cfs)
	ground water flow into SW-001	Q_g1_H =	0.18	(cfs)
	ground water flow into SW-002	Q_g2_H =	0.31	(cfs)
	ground water flow into SW-003	Q_g3_H =	0.10	(cfs)
	ground water flow into SW-004	Q_g4_H =	0.31	(cfs)
	ground water flow into SW-004A	Q_g4a_H =	1.38	(cfs)
	ground water flow into SW-005	Q_g5_H =	2.27	(cfs)
	ground water flow into USGS Gage	Q_g6_H =	0.47	(cfs)
	ground water flow into Colby Lake	Q_gcl_H =	1.17	(cfs)
	ground water seepage from East Pit to SW-003	Q_gep_003_H =	-	(cfs)
	ground water seepage from East Pit to SW-004	Q_gep_004_H =	-	(cfs)
	ground water seepage from West Pit	Q_gwp_H =	-	(cfs)
	ground water liner leakage from Cat 1/2 stockpile	Q_gC12_H =	0.0166	(cfs)
	ground water liner leakage from Cat 3 stockpile to SW-003	Q_gC3_003_H =	0.0002	(cfs)
	ground water liner leakage from Cat 3 stockpile to SW-004	Q_gC3_004_H =	-	(cfs)
	ground water liner leakage from Cat 3LO stockpile to SW-003	Q_gC3LO_003_H =	0.0002	(cfs)
	ground water liner leakage from Cat 3LO stockpile to SW-004	Q_gC3LO_004_H =	0.0002	(cfs)
	ground water liner leakage from Cat 4 stockpile	Q_gC4_H =	0.0002	(cfs)
	ground water liner leakage from LO SP	Q_gC4LO_H =	0.0002	(cfs)
	ground water seepage from Overburden Storage	Q_gOS_H =	0.0765	(cfs)
	ground water seepage from Overburden (Cat 1/2)	Q_gO12_H =	0.2059	(cfs)
	ground water liner leakage from Cat 1/2 sumps	Q_gC12s_H =	0.0000	(cfs)
	ground water liner leakage from Cat 3 sumps	Q_gC3s_H =	0.0000	(cfs)
	ground water liner leakage from Cat 3LO sumps	Q_gC3LOs_H =	0.0000	(cfs)
	ground water liner leakage from Cat 4 sumps	Q_gC4s_H =	0.0000	(cfs)
	ground water liner leakage from LO SP sumps	Q_gC4LOs_H =	0.0000	(cfs)
	ground water seepage from Overburden pond - PW1	Q_gOp1_H =	0.0189	(cfs)
	ground water seepage from Overburden pond - PW7	Q_gOp7_H =	-	(cfs)
	ground water leakage from Haul Road pond - PW2	Q_gHRp2_H =	0.0000	(cfs)
	ground water leakage from Haul Road pond - PW4	Q_gHRp4_H =	0.0000	(cfs)
	ground water leakage from RTH pond - PW3	Q_gRTHp_H =	0.0000	(cfs)
	ground water liner leakage from WWTF pond	Q_gWTFp_H =	0.000029	(cfs)

Partridge River Mass-Balance--Mine Site-Proposed Action

Case	Year 10
Parameter	Silver
Input concentration data	concentration of surface water into SW-001
	concentration of surface water into SW-002
	concentration of surface water into SW-003
	concentration of surface water into SW-004
	concentration of surface water into SW-004A
	concentration of surface water into SW-005
	concentration of surface water into USGS Gage
	concentration of surface water into Colby Lake
	concentration of surface water inflow from Hoyt Lakes WWTP
	concentration of surface water discharges from upstream of PM-1
	concentration of West Pit overflow
	concentration of ground water into SW-001
	concentration of ground water into SW-002
	concentration of ground water into SW-003
	concentration of ground water into SW-004
	concentration of ground water into SW-004A
	concentration of ground water into SW-005
	concentration of ground water into USGS Gage
	concentration of ground water into Colby Lake
	concentration of ground water seepage from East Pit
	concentration of ground water seepage from West Pit
	concentration of liner leakage from Cat 1/2 stockpile
	concentration of liner leakage from Cat 3 stockpile
	concentration of liner leakage from Cat 3LO stockpile
	concentration of liner leakage from Cat 4 stockpile
	concentration of liner leakage from LOSP
	concentration of seepage from Overburden (Storage)
	concentration of seepage from Overburden (Cat 1/2)
	concentration of liner leakage from Cat 1/2 sumps
	concentration of liner leakage from Cat 3 sumps
	concentration of liner leakage from Cat 3LO sumps
	concentration of liner leakage from Cat 4 sumps
	concentration of liner leakage from LOSP sumps
	concentration of seepage from Overburden Ponds - PW1
	concentration of seepage from Overburden Pond - PW7
	concentration of leakage from Haul Road Pond - PW2
	concentration of leakage from Haul Road Pond - PW4
	concentration of leakage from RTH Pond - PW3
	concentration of liner leakage from WWTP pond
Convert concentration to mass flux	High Flow
	mass flux of surface water into SW-001
	mass flux of ground water into SW-001
	mass flux of surface discharges from upstream of PM-1
	mass flux of surface water into SW-002
	mass flux of ground water into SW-002
	mass flux of surface water into SW-003
	mass flux of ground water into SW-003
	mass flux of seepage from East Pit to SW-003
	mass flux of liner leakage from Cat 3 stockpile to SW-003
	mass flux of liner leakage from Cat 3LO stockpile to SW-003
	mass flux of liner leakage from Cat 3 sumps to SW-003
	mass flux of surface water into SW-004
	mass flux of ground water into SW-004
	mass flux of seepage from East Pit to SW-004
	mass flux of seepage from West Pit
	mass flux of liner leakage from Cat 3 stockpile to SW-004
	mass flux of liner leakage from Cat 3LO stockpile to SW-004
	mass flux of liner leakage from Cat 4 stockpile
	mass flux of liner leakage from LOSP
	mass flux of seepage from Overburden (Storage)
	mass flux of liner leakage from Cat 3LO sumps to SW-004
	mass flux of liner leakage from Cat 4 sumps
	mass flux of liner leakage from LOSP sumps
	mass flux of seepage from Overburden Ponds - PW1
	mass flux of leakage from Haul Road Pond - PW2
	mass flux of leakage from Haul Road Pond - PW4
	mass flux of leakage from RTH Pond - PW3
	mass flux of liner leakage from WWTP pond
	mass flux of surface water into SW-004A
	mass flux of ground water into SW-004A
	mass flux of West Pit overflow
	mass flux of liner leakage from Cat 1/2 stockpile
	mass flux of liner leakage from Cat 1/2 sumps
	mass flux of seepage from Overburden (Cat 1/2)
	mass flux of seepage from Overburden Pond - PW7
	mass flux of surface water into SW-005
	mass flux of ground water into SW-005
	mass flux of surface water into USGS Gage
	mass flux of ground water into USGS Gage
	mass flux of surface water into Colby Lake
	mass flux of ground water into Colby Lake
	mass flux of surface water from Hoyt Lakes WWTP
Mass balance at each node	High Flow
	mass flux in river at SW-001
	mass flux in river at SW-002
	mass flux in river at SW-003
	mass flux in river at SW-004
	mass flux in river at SW-004A
	mass flux in river at SW-005
Convert mass flux to concentration	High Flow
	concentration in river at SW-001
	concentration in river at SW-002
	concentration in river at SW-003
	concentration in river at SW-004
	concentration in river at SW-004A
	concentration in river at SW-005



Partridge River Mass-Balance--Mine Site-Proposed Action

Case		Year 10	
Parameter		Aluminum	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0700 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0700 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0700 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0700 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0700 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0700 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0700 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0700 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0700 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0173 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.1250 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.1250 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.1250 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.1250 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.1250 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.1250 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.1250 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.1250 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	1.6800 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	52.1262 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	83.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	83.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	39.1112 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.4106 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.1400 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	1.6800 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	52.1262 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	83.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	83.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	39.1112 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.4106 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.1250 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.1250 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.1250 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	38.7000 (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M_s1 =	166.74077 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.63675 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.48959 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	171.87338 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	1.09446 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	109.35395 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.37030 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.25455 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.40467 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00003 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	111.83521 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	1.09514 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.40467 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.38845 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.23783 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.88859 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00008 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00004 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00004 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.21972 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00005 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00010 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.03224 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	1,255.69608 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	4.89696 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.79029 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00004 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.81585 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	321.93071 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	8.03013 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	1.86118 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	1.66263 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	665.55657 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	4.13888 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.77259 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	167.8671 (mg/s)
	mass flux in river at SW-002	M_r2 =	340.8350 (mg/s)
	mass flux in river at SW-003	M_r3 =	451.2185 (mg/s)
	mass flux in river at SW-004	M_r4 =	566.3206 (mg/s)
	mass flux in river at SW-004A	M_r4A =	1,828.5198 (mg/s)
	mass flux in river at SW-005	M_r5 =	2,158.4807 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	2,162.0045 (mg/s)
	mass flux into Colby Lake	M_cl =	2,832.4725 (mg/s)
	High Flow		
	concentration in river at SW-001	C_r1 =	0.06950 (mg/L)
	concentration in river at SW-002	C_r2 =	0.06985 (mg/L)
	concentration in river at SW-003	C_r3 =	0.07001 (mg/L)
	concentration in river at SW-004	C_r4 =	0.07032 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.07023 (mg/L)
	concentration in river at SW-005	C_r5 =	0.07031 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.07033 (mg/L)
	concentration in Colby Lake	C_cl =	0.07198 (mg/L)

Partridge River Mass-Balance--Mine Site-Proposed Action

Case	Year 10			
Parameter	Arsenic			
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0021 (mg/L)	
	concentration of surface water into SW-002	C_s2 =	0.0021 (mg/L)	
	concentration of surface water into SW-003	C_s3 =	0.0021 (mg/L)	
	concentration of surface water into SW-004	C_s4 =	0.0021 (mg/L)	
	concentration of surface water into SW-004A	C_s4A =	0.0021 (mg/L)	
	concentration of surface water into SW-005	C_s5 =	0.0021 (mg/L)	
	concentration of surface water into USGS Gage	C_s6 =	0.0021 (mg/L)	
	concentration of surface water into Colby Lake	C_scl =	0.0021 (mg/L)	
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0021 (mg/L)	
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0065 (mg/L)	
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)	
	concentration of ground water into SW-001	C_g1 =	0.0022 (mg/L)	
	concentration of ground water into SW-002	C_g2 =	0.0022 (mg/L)	
	concentration of ground water into SW-003	C_g3 =	0.0022 (mg/L)	
	concentration of ground water into SW-004	C_g4 =	0.0022 (mg/L)	
	concentration of ground water into SW-004A	C_g4A =	0.0022 (mg/L)	
	concentration of ground water into SW-005	C_g5 =	0.0022 (mg/L)	
	concentration of ground water into USGS Gage	C_g6 =	0.0022 (mg/L)	
	concentration of ground water into Colby Lake	C_gcl =	0.0022 (mg/L)	
	concentration of ground water seepage from East Pit	C_ggp =	#N/A (mg/L)	
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)	
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.7100 (mg/L)	
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.7100 (mg/L)	
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.7100 (mg/L)	
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.2042 (mg/L)	
	concentration of liner leakage from LOSP	C_gC4LO =	0.0427 (mg/L)	
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0016 (mg/L)	
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0027 (mg/L)	
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.7100 (mg/L)	
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.7100 (mg/L)	
	concentration of liner leakage from Cat 3LO sumps	C_g3LOs =	0.7100 (mg/L)	
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.2042 (mg/L)	
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0427 (mg/L)	
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0016 (mg/L)	
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)	
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0022 (mg/L)	
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0022 (mg/L)	
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0022 (mg/L)	
	concentration of liner leakage from WWTF ponc	C_gWTFp =	0.3900 (mg/L)	
	Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	5.02604 (mg/s)
		mass flux of ground water into SW-001	M_g1 =	0.01100 (mg/s)
mass flux of surface discharges from upstream of PM-1		M_sns =	0.18395 (mg/s)	
mass flux of surface water into SW-002		M_s2 =	5.18075 (mg/s)	
mass flux of ground water into SW-002		M_g2 =	0.01891 (mg/s)	
mass flux of surface water into SW-003		M_s3 =	3.29624 (mg/s)	
mass flux of ground water into SW-003		M_g3 =	0.00640 (mg/s)	
mass flux of seepage from East Pit to SW-003		M_ggp_003 =	#N/A (mg/s)	
mass flux of liner leakage from Cat 3 stockpile to SW-003		M_gC3_003 =	0.00347 (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-003		M_gC3LO_00 =	0.00346 (mg/s)	
mass flux of liner leakage from Cat 3 sumps to SW-003		M_gC3s_003 =	0.00000 (mg/s)	
mass flux of surface water into SW-004		M_s4 =	3.37103 (mg/s)	
mass flux of ground water into SW-004		M_g4 =	0.01892 (mg/s)	
mass flux of seepage from East Pit to SW-004		M_ggp_004 =	#N/A (mg/s)	
mass flux of seepage from West Pit		M_gwp =	#N/A (mg/s)	
mass flux of liner leakage from Cat 3 stockpile to SW-004		M_gC3_004 =	- (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-004		M_gC3LO_00 =	0.00346 (mg/s)	
mass flux of liner leakage from Cat 4 stockpile		M_gC4 =	0.00096 (mg/s)	
mass flux of liner leakage from LOSP		M_gC4LO =	0.00026 (mg/s)	
mass flux of seepage from Overburden (Storage)		M_gOS =	0.00338 (mg/s)	
mass flux of liner leakage from Cat 3LO sumps to SW-004		M_gC3LOs_0 =	0.00000 (mg/s)	
mass flux of liner leakage from Cat 4 sumps		M_gC4s =	0.00000 (mg/s)	
mass flux of liner leakage from LOSP sumps		M_gC4LOs =	0.00000 (mg/s)	
mass flux of seepage from Overburden Ponds - PW1		M_gOp1 =	0.00083 (mg/s)	
mass flux of leakage from Haul Road Pond - PW2		M_gHRp2 =	0.00000 (mg/s)	
mass flux of leakage from Haul Road Pond - PW4		M_gHRp4 =	0.00000 (mg/s)	
mass flux of leakage from RTH Pond - PW3		M_gRTHp =	0.00000 (mg/s)	
mass flux of liner leakage from WWTF pond		M_gWTFp =	0.00032 (mg/s)	
mass flux of surface water into SW-004A		M_s4A =	37.85027 (mg/s)	
mass flux of ground water into SW-004A		M_g4A =	0.08462 (mg/s)	
mass flux of West Pit overflow		M_sms =	#N/A (mg/s)	
mass flux of liner leakage from Cat 1/2 stockpile		M_gC12 =	0.33399 (mg/s)	
mass flux of liner leakage from Cat 1/2 sumps		M_gC12s =	0.00002 (mg/s)	
mass flux of seepage from Overburden (Cat 1/2)		M_gO12 =	0.01573 (mg/s)	
mass flux of seepage from Overburden Pond - PW7		M_gOp7 =	#N/A (mg/s)	
mass flux of surface water into SW-005		M_s5 =	9.70391 (mg/s)	
mass flux of ground water into SW-005		M_g5 =	0.13876 (mg/s)	
mass flux of surface water into USGS Gage		M_s6 =	0.05610 (mg/s)	
mass flux of ground water into USGS Gage		M_g6 =	0.02873 (mg/s)	
mass flux of surface water into Colby Lake		M_scl =	20.06178 (mg/s)	
mass flux of ground water into Colby Lake		M_gcl =	0.07152 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP		M_shl =	0.02329 (mg/s)	
Mass balance at each node	mass flux in river at SW-001	M_r1 =	5.2210 (mg/s)	
	mass flux in river at SW-002	M_r2 =	10.4207 (mg/s)	
	mass flux in river at SW-003	M_r3 =	13.7302 (mg/s)	
	mass flux in river at SW-004	M_r4 =	17.1294 (mg/s)	
	mass flux in river at SW-004A	M_r4A =	55.4140 (mg/s)	
	mass flux in river at SW-005	M_r5 =	65.2567 (mg/s)	
	mass flux in river at USGS Gage	M_r6 =	65.3415 (mg/s)	
mass flux into Colby Lake	M_cl =	85.4981 (mg/s)		
Convert mass flux to concentration	concentration in river at SW-001	C_r1 =	0.00216 (mg/L)	
	concentration in river at SW-002	C_r2 =	0.00214 (mg/L)	
	concentration in river at SW-003	C_r3 =	0.00213 (mg/L)	
	concentration in river at SW-004	C_r4 =	0.00213 (mg/L)	
	concentration in river at SW-004A	C_r4A =	0.00213 (mg/L)	
	concentration in river at SW-005	C_r5 =	0.00213 (mg/L)	
	concentration in river at USGS Gage	C_r6 =	0.00213 (mg/L)	
concentration in Colby Lake	C_cl =	0.00219 (mg/L)		

Partridge River Mass-Balance--Mine Site-Proposed Action

Case	Year 10		
Parameter	Boron		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0450 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0450 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0450 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0450 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0450 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0450 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0450 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0450 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0450 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0960 (mg/L)
	concentration of West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0870 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0870 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0870 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0870 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0870 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0870 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0870 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0870 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	0.6811 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	0.7600 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.7600 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.7600 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.7600 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0622 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	0.0370 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	0.6811 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C gC3s =	0.7600 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.7600 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.7600 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.7600 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0622 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0870 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0870 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0870 (mg/L)
	concentration of liner leakage from WWTF ponc	C gWTFp =	0.8800 (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M s1 =	107.19050 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.44318 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	2.71680 (mg/s)
	mass flux of surface water into SW-002	M s2 =	110.49003 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.76175 (mg/s)
	mass flux of surface water into SW-003	M s3 =	70.29897 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.25773 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M gC3_003 =	0.00371 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00371 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	71.89406 (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.76221 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00371 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00356 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00462 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.13461 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.03328 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00003 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00007 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00073 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	807.23320 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	3.40829 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M gC12 =	0.32038 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M gC12s =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M gO12 =	0.21562 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	206.95546 (mg/s)
	mass flux of ground water into SW-005	M g5 =	5.58897 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	1.19648 (mg/s)
mass flux of ground water into USGS Gage	M g6 =	1.15719 (mg/s)	
mass flux of surface water into Colby Lake	M scl =	427.85780 (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	2.88066 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.49667 (mg/s)	
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M r1 =	110.3505 (mg/s)
	mass flux in river at SW-002	M r2 =	221.6022 (mg/s)
	mass flux in river at SW-003	M r3 =	292.1664 (mg/s)
	mass flux in river at SW-004	M r4 =	365.0033 (mg/s)
	mass flux in river at SW-004A	M r4A =	1,176.1808 (mg/s)
	mass flux in river at SW-005	M r5 =	1,388.7252 (mg/s)
	mass flux in river at USGS Gage	M r6 =	1,391.0788 (mg/s)
mass flux into Colby Lake	M cl =	1,822.3140 (mg/s)	
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C r1 =	0.04569 (mg/L)
	concentration in river at SW-002	C r2 =	0.04541 (mg/L)
	concentration in river at SW-003	C r3 =	0.04533 (mg/L)
	concentration in river at SW-004	C r4 =	0.04532 (mg/L)
	concentration in river at SW-004A	C r4A =	0.04517 (mg/L)
	concentration in river at SW-005	C r5 =	0.04523 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.04525 (mg/L)
	concentration in Colby Lake	C cl =	0.04655 (mg/L)

Partridge River Mass-Balance--Mine Site-Proposed Action

Case	Year 10				
Parameter	Barium				
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0077	(mg/L)	
	concentration of surface water into SW-002	C_s2 =	0.0077	(mg/L)	
	concentration of surface water into SW-003	C_s3 =	0.0077	(mg/L)	
	concentration of surface water into SW-004	C_s4 =	0.0077	(mg/L)	
	concentration of surface water into SW-004A	C_s4A =	0.0077	(mg/L)	
	concentration of surface water into SW-005	C_s5 =	0.0077	(mg/L)	
	concentration of surface water into USGS Gage	C_s6 =	0.0077	(mg/L)	
	concentration of surface water into Colby Lake	C_scl =	0.0077	(mg/L)	
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0077	(mg/L)	
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0050	(mg/L)	
	concentration of West Pit overflow	C_sms =	#N/A	(mg/L)	
	concentration of ground water into SW-001	C_g1 =	0.0219	(mg/L)	
	concentration of ground water into SW-002	C_g2 =	0.0219	(mg/L)	
	concentration of ground water into SW-003	C_g3 =	0.0219	(mg/L)	
	concentration of ground water into SW-004	C_g4 =	0.0219	(mg/L)	
	concentration of ground water into SW-004A	C_g4A =	0.0219	(mg/L)	
	concentration of ground water into SW-005	C_g5 =	0.0219	(mg/L)	
	concentration of ground water into USGS Gage	C_g6 =	0.0219	(mg/L)	
	concentration of ground water into Colby Lake	C_gcl =	0.0219	(mg/L)	
	concentration of ground water seepage from East Pit	C_ggp =	#N/A	(mg/L)	
	concentration of ground water seepage from West Pit	C_gwp =	#N/A	(mg/L)	
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.1900	(mg/L)	
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.1900	(mg/L)	
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.1900	(mg/L)	
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.1900	(mg/L)	
	concentration of liner leakage from LOSP	C_gC4LO =	0.1900	(mg/L)	
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0168	(mg/L)	
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0140	(mg/L)	
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.1900	(mg/L)	
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.1900	(mg/L)	
	concentration of liner leakage from Cat 3LO sumps	C_g3LOs =	0.1900	(mg/L)	
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.1900	(mg/L)	
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.1900	(mg/L)	
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0168	(mg/L)	
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A	(mg/L)	
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0219	(mg/L)	
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0219	(mg/L)	
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0219	(mg/L)	
	concentration of liner leakage from WWTF ponc	C_gWTFp =	0.2300	(mg/L)	
	Convert concentration to mass flux			High Flow	
		mass flux of surface water into SW-001	M_s1 =	18.29384	(mg/s)
		mass flux of ground water into SW-001	M_g1 =	0.11166	(mg/s)
mass flux of surface discharges from upstream of PM-1		M_sns =	0.14150	(mg/s)	
mass flux of surface water into SW-002		M_s2 =	18.85696	(mg/s)	
mass flux of ground water into SW-002		M_g2 =	0.19193	(mg/s)	
mass flux of surface water into SW-003		M_s3 =	11.99769	(mg/s)	
mass flux of ground water into SW-003		M_g3 =	0.06494	(mg/s)	
mass flux of seepage from East Pit to SW-003		M_ggp_003 =	#N/A	(mg/s)	
mass flux of liner leakage from Cat 3 stockpile to SW-003		M_gC3_003 =	0.00093	(mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-003		M_gC3LO_00	0.00093	(mg/s)	
mass flux of liner leakage from Cat 3 sumps to SW-003		M_gC3s_003	0.00000	(mg/s)	
mass flux of surface water into SW-004		M_s4 =	12.26992	(mg/s)	
mass flux of ground water into SW-004		M_g4 =	0.19204	(mg/s)	
mass flux of seepage from East Pit to SW-004		M_ggp_004 =	#N/A	(mg/s)	
mass flux of seepage from West Pit		M_gwp =	#N/A	(mg/s)	
mass flux of liner leakage from Cat 3 stockpile to SW-004		M_gC3_004 =	-	(mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-004		M_gC3LO_00	0.00093	(mg/s)	
mass flux of liner leakage from Cat 4 stockpile		M_gC4 =	0.00089	(mg/s)	
mass flux of liner leakage from LOSP		M_gC4LO =	0.00116	(mg/s)	
mass flux of seepage from Overburden (Storage)		M_gOS =	0.03643	(mg/s)	
mass flux of liner leakage from Cat 3LO sumps to SW-004		M_gC3LOs_0	0.00000	(mg/s)	
mass flux of liner leakage from Cat 4 sumps		M_gC4s =	0.00000	(mg/s)	
mass flux of liner leakage from LOSP sumps		M_gC4LOs =	0.00000	(mg/s)	
mass flux of seepage from Overburden Ponds - PW1		M_gOp1 =	0.00901	(mg/s)	
mass flux of leakage from Haul Road Pond - PW2		M_gHRp2 =	0.00001	(mg/s)	
mass flux of leakage from Haul Road Pond - PW4		M_gHRp4 =	0.00002	(mg/s)	
mass flux of leakage from RTH Pond - PW3		M_gRTHp =	0.00000	(mg/s)	
mass flux of liner leakage from WWTF pond		M_gWTFp =	0.00019	(mg/s)	
mass flux of surface water into SW-004A		M_s4A =	137.76780	(mg/s)	
mass flux of ground water into SW-004A		M_g4A =	0.85873	(mg/s)	
mass flux of West Pit overflow		M_sms =	#N/A	(mg/s)	
mass flux of liner leakage from Cat 1/2 stockpile		M_gC12 =	0.08938	(mg/s)	
mass flux of liner leakage from Cat 1/2 sumps		M_gC12s =	0.00000	(mg/s)	
mass flux of seepage from Overburden (Cat 1/2)		M_gO12 =	0.08158	(mg/s)	
mass flux of seepage from Overburden Pond - PW7		M_gOp7 =	#N/A	(mg/s)	
mass flux of surface water into SW-005		M_s5 =	35.32040	(mg/s)	
mass flux of ground water into SW-005		M_g5 =	1.40816	(mg/s)	
mass flux of surface water into USGS Gage		M_s6 =	0.20420	(mg/s)	
mass flux of ground water into USGS Gage		M_g6 =	0.29156	(mg/s)	
mass flux of surface water into Colby Lake		M_scl =	73.02106	(mg/s)	
mass flux of ground water into Colby Lake		M_gcl =	0.72579	(mg/s)	
mass flux of surface water from Hoyt Lakes WWTP		M_shl =	0.08476	(mg/s)	
Mass balance at each node			High Flow		
	mass flux in river at SW-001	M_r1 =	18.5470	(mg/s)	
	mass flux in river at SW-002	M_r2 =	37.5969	(mg/s)	
	mass flux in river at SW-003	M_r3 =	49.6604	(mg/s)	
	mass flux in river at SW-004	M_r4 =	62.1710	(mg/s)	
	mass flux in river at SW-004A	M_r4A =	200.9685	(mg/s)	
	mass flux in river at SW-005	M_r5 =	237.6970	(mg/s)	
	mass flux in river at USGS Gage	M_r6 =	238.1928	(mg/s)	
	mass flux into Colby Lake	M_cl =	312.0244	(mg/s)	
Convert mass flux to concentration			High Flow		
	concentration in river at SW-001	C_r1 =	0.00768	(mg/L)	
	concentration in river at SW-002	C_r2 =	0.00770	(mg/L)	
	concentration in river at SW-003	C_r3 =	0.00771	(mg/L)	
	concentration in river at SW-004	C_r4 =	0.00772	(mg/L)	
	concentration in river at SW-004A	C_r4A =	0.00772	(mg/L)	
	concentration in river at SW-005	C_r5 =	0.00774	(mg/L)	
	concentration in river at USGS Gage	C_r6 =	0.00775	(mg/L)	
	concentration in Colby Lake	C_cl =	0.00811	(mg/L)	

Partridge River Mass-Balance--Mine Site-Proposed Action

Case		Year 10	
Parameter		Beryllium	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0001 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0001 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0001 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0001 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0001 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0001 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0001 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0001 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0001 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0001 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0001 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0001 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0001 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0001 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0001 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0001 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0001 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0001 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.0023 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0023 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0023 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0023 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	- (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.0023 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0023 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0023 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0023 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	- (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0001 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0001 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0001 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0027 (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M_s1 =	0.23820 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00074 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.00283 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	0.24553 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.00127 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.15622 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00043 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00	0.00001 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.15976 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.00127 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00	0.00001 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00001 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	- (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00000 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	1.79385 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.00568 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.00009 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	0.45990 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.00931 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.00266 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.00193 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	0.95080 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.00480 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00110 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	0.2418 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.4886 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.6462 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.8063 (mg/s)
	mass flux in river at SW-004A	M_r4A =	2.6059 (mg/s)
	mass flux in river at SW-005	M_r5 =	3.0752 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	3.0797 (mg/s)
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C_r1 =	0.00010 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00010 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00010 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00010 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00010 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00010 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00010 (mg/L)
	concentration in Colby Lake	C_cl =	0.00010 (mg/L)



Partridge River Mass-Balance--Mine Site-Proposed Action

Case	Year 10		
Parameter	Calcium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	17.0000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	17.0000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	17.0000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	17.0000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	17.0000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	17.0000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	17.0000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	17.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	17.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	24.5000 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	14.7900 (mg/L)
	concentration of ground water into SW-002	C_g2 =	14.7900 (mg/L)
	concentration of ground water into SW-003	C_g3 =	14.7900 (mg/L)
	concentration of ground water into SW-004	C_g4 =	14.7900 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	14.7900 (mg/L)
	concentration of ground water into SW-005	C_g5 =	14.7900 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	14.7900 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	14.7900 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	211.2287 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	480.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	480.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	415.6951 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	86.8733 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	9.3700 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	15.8000 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	211.2287 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	480.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	480.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	415.6951 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	86.8733 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	9.3700 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	14.7900 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	14.7900 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	14.7900 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	375.0000 (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M_s1 =	40,494.18700 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	75.34026 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	693.35000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	41,740.67773 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	129.49691 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	26,557.38902 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	43.81436 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	2.34398 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	2.34023 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00025 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	27,159.97926 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	129.57641 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	2.34023 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	1.94550 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.52825 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	20.27794 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00047 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00019 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00008 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	5.01400 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00563 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.01206 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.31239 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	304,954.76287 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	579.40885 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	99.36465 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00463 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	92.07427 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	78,183.17314 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	950.12439 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	452.00197 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	196.72179 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	161,635.16700 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	489.71169 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	187.62900 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	41,262.8773 (mg/s)
	mass flux in river at SW-002	M_r2 =	83,133.0519 (mg/s)
	mass flux in river at SW-003	M_r3 =	109,738.9397 (mg/s)
	mass flux in river at SW-004	M_r4 =	137,058.9324 (mg/s)
	mass flux in river at SW-004A	M_r4A =	442,784.5477 (mg/s)
	mass flux in river at SW-005	M_r5 =	521,917.8452 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	522,566.5690 (mg/s)
	mass flux into Colby Lake	M_cl =	684,879.0766 (mg/s)
	High Flow		
	concentration in river at SW-001	C_r1 =	17.08321 (mg/L)
	concentration in river at SW-002	C_r2 =	17.03723 (mg/L)
	concentration in river at SW-003	C_r3 =	17.02787 (mg/L)
	concentration in river at SW-004	C_r4 =	17.01794 (mg/L)
	concentration in river at SW-004A	C_r4A =	17.00547 (mg/L)
	concentration in river at SW-005	C_r5 =	17.00001 (mg/L)
	concentration in river at USGS Gage	C_r6 =	16.99905 (mg/L)
	concentration in Colby Lake	C_cl =	16.98342 (mg/L)



Partridge River Mass-Balance--Mine Site-Proposed Action

Case	Year 10		
Parameter	Cadmium		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0001 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0001 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0001 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0001 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0001 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0001 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0001 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0001 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0001 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0001 (mg/L)
	concentration of West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0001 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0001 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0001 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0001 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0001 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0001 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0001 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0001 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	0.0149 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0149 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0149 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.0149 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0001 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C gC3s =	0.0149 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.0149 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0149 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0149 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0001 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0001 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0001 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0001 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	0.0100 (mg/L)
Convert concentration to mass flux			High Flow
	mass flux of surface water into SW-001	M s1 =	0.23820 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.00051 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.00283 (mg/s)
	mass flux of surface water into SW-002	M s2 =	0.24553 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.00088 (mg/s)
	mass flux of surface water into SW-003	M s3 =	0.15622 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.00030 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep 003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M gC3 003 =	0.00007 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO 00	0.00007 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M gC3s 003	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	0.15976 (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.00088 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep 004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M gC3 004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO 00	0.00007 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00007 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00009 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.00013 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs 0	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.00003 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00001 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	1.79385 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.00392 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M gC12 =	0.00008 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	0.45990 (mg/s)
	mass flux of ground water into SW-005	M g5 =	0.00642 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	0.00266 (mg/s)
mass flux of ground water into USGS Gage	M g6 =	0.00133 (mg/s)	
mass flux of surface water into Colby Lake	M scl =	0.95080 (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	0.00331 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.00110 (mg/s)	
Mass balance at each node			High Flow
	mass flux in river at SW-001	M r1 =	0.2415 (mg/s)
	mass flux in river at SW-002	M r2 =	0.4879 (mg/s)
	mass flux in river at SW-003	M r3 =	0.6446 (mg/s)
	mass flux in river at SW-004	M r4 =	0.8057 (mg/s)
	mass flux in river at SW-004A	M r4A =	2.6035 (mg/s)
	mass flux in river at SW-005	M r5 =	3.0698 (mg/s)
	mass flux in river at USGS Gage	M r6 =	3.0738 (mg/s)
	mass flux into Colby Lake	M cl =	4.0290 (mg/s)
Convert mass flux to concentration			High Flow
	concentration in river at SW-001	C r1 =	0.00010 (mg/L)
	concentration in river at SW-002	C r2 =	0.00010 (mg/L)
	concentration in river at SW-003	C r3 =	0.00010 (mg/L)
	concentration in river at SW-004	C r4 =	0.00010 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00010 (mg/L)
	concentration in river at SW-005	C r5 =	0.00010 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00010 (mg/L)
	concentration in Colby Lake	C cl =	0.00010 (mg/L)

Partridge River Mass-Balance--Mine Site-Proposed Action

Case Parameter	Year 10 Chloride		
Input concentration data	concentration of surface water into SW-001	C_s1 =	8.0000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	8.0000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	8.0000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	8.0000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	8.0000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	8.0000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	8.0000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	8.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	8.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	1.6000 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	6.6000 (mg/L)
	concentration of ground water into SW-002	C_g2 =	6.6000 (mg/L)
	concentration of ground water into SW-003	C_g3 =	6.6000 (mg/L)
	concentration of ground water into SW-004	C_g4 =	6.6000 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	6.6000 (mg/L)
	concentration of ground water into SW-005	C_g5 =	6.6000 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	6.6000 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	6.6000 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	9.1993 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	2.5990 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	5.3519 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	3.1935 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.8257 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	5.3500 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	2.3300 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	9.1993 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	2.5990 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	5.3519 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	3.1935 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.8257 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	5.3500 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	6.6000 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	6.6000 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	6.6000 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	27.1000 (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M_s1 =	19,056.08800 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	33.62040 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	45.28000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	19,642.67187 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	57.78767 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	12,497.59483 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	19,55205 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.01269 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.02609 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	12,781.16671 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	57.82314 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.02609 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.01495 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00502 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	11.57812 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	2.86285 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00251 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00538 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.02258 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	143,508.12370 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	258.55973 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	4.32748 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00020 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	13.57804 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	36,792.08148 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	423.99060 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	212.70681 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	87.78660 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	76,063.60800 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	218.53260 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	88.29600 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	19,134.9884 (mg/s)
	mass flux in river at SW-002	M_r2 =	38,835.4479 (mg/s)
	mass flux in river at SW-003	M_r3 =	51,352.6336 (mg/s)
	mass flux in river at SW-004	M_r4 =	64,206.1410 (mg/s)
	mass flux in river at SW-004A	M_r4A =	207,990.7301 (mg/s)
	mass flux in river at SW-005	M_r5 =	245,206.8022 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	245,507.2956 (mg/s)
	mass flux into Colby Lake	M_cl =	321,877.7322 (mg/s)
	High Flow		
	concentration in river at SW-001	C_r1 =	7.92206 (mg/L)
	concentration in river at SW-002	C_r2 =	7.95891 (mg/L)
	concentration in river at SW-003	C_r3 =	7.96824 (mg/L)
	concentration in river at SW-004	C_r4 =	7.97216 (mg/L)
	concentration in river at SW-004A	C_r4A =	7.98804 (mg/L)
	concentration in river at SW-005	C_r5 =	7.98692 (mg/L)
	concentration in river at USGS Gage	C_r6 =	7.98634 (mg/L)
	concentration in Colby Lake	C_cl =	7.92449 (mg/L)

Partridge River Mass-Balance--Mine Site-Proposed Action

Case	Year 10			
Parameter	Cobalt			
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0005 (mg/L)	
	concentration of surface water into SW-002	C_s2 =	0.0005 (mg/L)	
	concentration of surface water into SW-003	C_s3 =	0.0005 (mg/L)	
	concentration of surface water into SW-004	C_s4 =	0.0005 (mg/L)	
	concentration of surface water into SW-004A	C_s4A =	0.0005 (mg/L)	
	concentration of surface water into SW-005	C_s5 =	0.0005 (mg/L)	
	concentration of surface water into USGS Gage	C_s6 =	0.0005 (mg/L)	
	concentration of surface water into Colby Lake	C_scl =	0.0005 (mg/L)	
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0005 (mg/L)	
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0005 (mg/L)	
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)	
	concentration of ground water into SW-001	C_g1 =	0.0017 (mg/L)	
	concentration of ground water into SW-002	C_g2 =	0.0017 (mg/L)	
	concentration of ground water into SW-003	C_g3 =	0.0017 (mg/L)	
	concentration of ground water into SW-004	C_g4 =	0.0017 (mg/L)	
	concentration of ground water into SW-004A	C_g4A =	0.0017 (mg/L)	
	concentration of ground water into SW-005	C_g5 =	0.0017 (mg/L)	
	concentration of ground water into USGS Gage	C_g6 =	0.0017 (mg/L)	
	concentration of ground water into Colby Lake	C_gcl =	0.0017 (mg/L)	
	concentration of ground water seepage from East Pit	C_ggp =	#N/A (mg/L)	
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)	
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0132 (mg/L)	
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	24.8269 (mg/L)	
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	41.3742 (mg/L)	
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	14.6329 (mg/L)	
	concentration of liner leakage from LOSP	C_gC4LO =	3.0580 (mg/L)	
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0011 (mg/L)	
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0013 (mg/L)	
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0132 (mg/L)	
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	24.8269 (mg/L)	
	concentration of liner leakage from Cat 3LO sumps	C_g3LOs =	41.3742 (mg/L)	
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	14.6329 (mg/L)	
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	3.0580 (mg/L)	
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0011 (mg/L)	
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)	
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0017 (mg/L)	
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0017 (mg/L)	
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0017 (mg/L)	
	concentration of liner leakage from WWTF ponc	C_gWTFp =	10.9000 (mg/L)	
	Convert concentration to mass flux	High Flow		
		mass flux of surface water into SW-001	M_s1 =	1.19101 (mg/s)
		mass flux of ground water into SW-001	M_g1 =	0.00841 (mg/s)
		mass flux of surface discharges from upstream of PM-1	M_sns =	0.01415 (mg/s)
mass flux of surface water into SW-002		M_s2 =	1.22767 (mg/s)	
mass flux of ground water into SW-002		M_g2 =	0.01445 (mg/s)	
mass flux of surface water into SW-003		M_s3 =	0.78110 (mg/s)	
mass flux of ground water into SW-003		M_g3 =	0.00489 (mg/s)	
mass flux of seepage from East Pit to SW-003		M_ggp_003 =	#N/A (mg/s)	
mass flux of liner leakage from Cat 3 stockpile to SW-003		M_gC3_003 =	0.12124 (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-003		M_gC3LO_00 =	0.20172 (mg/s)	
mass flux of liner leakage from Cat 3 sumps to SW-003		M_gC3s_003 =	0.00001 (mg/s)	
mass flux of surface water into SW-004		M_s4 =	0.79882 (mg/s)	
mass flux of ground water into SW-004		M_g4 =	0.01446 (mg/s)	
mass flux of seepage from East Pit to SW-004		M_ggp_004 =	#N/A (mg/s)	
mass flux of seepage from West Pit		M_gwp =	#N/A (mg/s)	
mass flux of liner leakage from Cat 3 stockpile to SW-004		M_gC3_004 =	- (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-004		M_gC3LO_00 =	0.20172 (mg/s)	
mass flux of liner leakage from Cat 4 stockpile		M_gC4 =	0.06848 (mg/s)	
mass flux of liner leakage from LOSP		M_gC4LO =	0.01860 (mg/s)	
mass flux of seepage from Overburden (Storage)		M_gOS =	0.00240 (mg/s)	
mass flux of liner leakage from Cat 3LO sumps to SW-004		M_gC3LOs_0 =	0.00004 (mg/s)	
mass flux of liner leakage from Cat 4 sumps		M_gC4s =	0.00001 (mg/s)	
mass flux of liner leakage from LOSP sumps		M_gC4LOs =	0.00000 (mg/s)	
mass flux of seepage from Overburden Ponds - PW1		M_gOp1 =	0.00059 (mg/s)	
mass flux of leakage from Haul Road Pond - PW2		M_gHRp2 =	0.00000 (mg/s)	
mass flux of leakage from Haul Road Pond - PW4		M_gHRp4 =	0.00000 (mg/s)	
mass flux of leakage from RTH Pond - PW3		M_gRTHp =	0.00000 (mg/s)	
mass flux of liner leakage from WWTF pond		M_gWTFp =	0.00908 (mg/s)	
mass flux of surface water into SW-004A		M_s4A =	8.96926 (mg/s)	
mass flux of ground water into SW-004A		M_g4A =	0.06464 (mg/s)	
mass flux of West Pit overflow		M_sms =	#N/A (mg/s)	
mass flux of liner leakage from Cat 1/2 stockpile		M_gC12 =	0.00620 (mg/s)	
mass flux of liner leakage from Cat 1/2 sumps		M_gC12s =	0.00000 (mg/s)	
mass flux of seepage from Overburden (Cat 1/2)		M_gO12 =	0.00758 (mg/s)	
mass flux of seepage from Overburden Pond - PW7		M_gOp7 =	#N/A (mg/s)	
mass flux of surface water into SW-005		M_s5 =	2.29951 (mg/s)	
mass flux of ground water into SW-005		M_g5 =	0.10600 (mg/s)	
mass flux of surface water into USGS Gage		M_s6 =	0.01329 (mg/s)	
mass flux of ground water into USGS Gage		M_g6 =	0.02195 (mg/s)	
mass flux of surface water into Colby Lake		M_scl =	4.75398 (mg/s)	
mass flux of ground water into Colby Lake		M_gcl =	0.05463 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP		M_shl =	0.00552 (mg/s)	
Mass balance at each node	High Flow			
	mass flux in river at SW-001	M_r1 =	1.2138 (mg/s)	
	mass flux in river at SW-002	M_r2 =	2.4557 (mg/s)	
	mass flux in river at SW-003	M_r3 =	3.5646 (mg/s)	
	mass flux in river at SW-004	M_r4 =	4.6788 (mg/s)	
	mass flux in river at SW-004A	M_r4A =	13.7265 (mg/s)	
	mass flux in river at SW-005	M_r5 =	16.1320 (mg/s)	
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	16.1673 (mg/s)	
	mass flux into Colby Lake	M_cl =	20.9814 (mg/s)	
	High Flow			
	concentration in river at SW-001	C_r1 =	0.00050 (mg/L)	
	concentration in river at SW-002	C_r2 =	0.00050 (mg/L)	
	concentration in river at SW-003	C_r3 =	0.00055 (mg/L)	
	concentration in river at SW-004	C_r4 =	0.00058 (mg/L)	
	concentration in river at SW-004A	C_r4A =	0.00053 (mg/L)	
	concentration in river at SW-005	C_r5 =	0.00053 (mg/L)	
	concentration in river at USGS Gage	C_r6 =	0.00053 (mg/L)	
	concentration in Colby Lake	C_cl =	0.00064 (mg/L)	

Partridge River Mass-Balance--Mine Site-Proposed Action

Case Parameter	Year 10 Copper		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0017 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0017 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0017 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0017 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0017 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0017 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0017 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0017 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0190 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0012 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0030 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0030 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0030 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0030 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0030 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0030 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0030 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0030 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0920 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	139.7250 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	202.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	2.6412 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.5520 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0214 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0170 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0920 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	139.7250 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	202.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	2.6412 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.5520 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0214 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0030 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0030 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0030 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	11.4000 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	4.04942 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.01503 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.03509 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	4.17407 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.02583 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	2.65574 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00874 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.68232 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.98485 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00007 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	2.71600 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.02585 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.98485 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.01236 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00336 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.04640 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00020 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.01147 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00950 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	30.49548 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.11557 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.04328 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.09907 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	7.81832 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.18951 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.04520 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.03924 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	16.16352 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.09768 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.20970 (mg/s)
Mass balance at each node	mass flux in river at SW-001	M_r1 =	4.0995 (mg/s)
	mass flux in river at SW-002	M_r2 =	8.2994 (mg/s)
	mass flux in river at SW-003	M_r3 =	12.6312 (mg/s)
	mass flux in river at SW-004	M_r4 =	16.4412 (mg/s)
	mass flux in river at SW-004A	M_r4A =	47.1946 (mg/s)
	mass flux in river at SW-005	M_r5 =	55.2024 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	55.2869 (mg/s)
	mass flux into Colby Lake	M_cl =	71.7578 (mg/s)
Convert mass flux to concentration	concentration in river at SW-001	C_r1 =	0.00170 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00170 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00196 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00204 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00181 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00180 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00180 (mg/L)
	concentration in Colby Lake	C_cl =	0.00224 (mg/L)

Partridge River Mass-Balance--Mine Site-Proposed Action

Case		Year 10	
Parameter		Fluoride	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0700 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0700 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0700 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0700 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0700 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0700 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0700 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0700 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0700 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.1400 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.2800 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.2800 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.2800 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.2800 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.2800 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.2800 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.2800 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.2800 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0627 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.0622 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0622 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0623 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0629 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.2239 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.4200 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0627 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.0622 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0622 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0623 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0629 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.2239 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.2800 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.2800 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.2800 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	17.9000 (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M_s1 =	166.74077 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	1.42632 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	3.96200 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	171.87338 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	2.45160 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	109.35395 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.82948 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00030 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00030 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	111.83521 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	2.45310 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00030 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00029 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00038 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.48453 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.11981 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00011 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00023 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.01491 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	1,255.69608 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	10.96920 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.02948 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	2.44754 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	321.93071 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	17.98748 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	1.86118 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	3.72428 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	665.55657 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	9.27108 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.77259 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	172.1291 (mg/s)
	mass flux in river at SW-002	M_r2 =	346.4541 (mg/s)
	mass flux in river at SW-003	M_r3 =	456.6381 (mg/s)
	mass flux in river at SW-004	M_r4 =	571.5470 (mg/s)
	mass flux in river at SW-004A	M_r4A =	1,840.6893 (mg/s)
	mass flux in river at SW-005	M_r5 =	2,180.6075 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	2,186.1929 (mg/s)
	mass flux into Colby Lake	M_cl =	2,861.7932 (mg/s)
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C_r1 =	0.07126 (mg/L)
	concentration in river at SW-002	C_r2 =	0.07100 (mg/L)
	concentration in river at SW-003	C_r3 =	0.07086 (mg/L)
	concentration in river at SW-004	C_r4 =	0.07097 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.07069 (mg/L)
	concentration in river at SW-005	C_r5 =	0.07103 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.07112 (mg/L)
	concentration in Colby Lake	C_cl =	0.07678 (mg/L)

Partridge River Mass-Balance--Mine Site-Proposed Action

Case Parameter	Year 10 Iron		
Input concentration data	concentration of surface water into SW-001	C_s1 =	1.6000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	1.6000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	1.6000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	1.6000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	1.6000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	1.6000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	1.6000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	1.6000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	1.6000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0300 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	2.8440 (mg/L)
	concentration of ground water into SW-002	C_g2 =	2.8440 (mg/L)
	concentration of ground water into SW-003	C_g3 =	2.8440 (mg/L)
	concentration of ground water into SW-004	C_g4 =	2.8440 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	2.8440 (mg/L)
	concentration of ground water into SW-005	C_g5 =	2.8440 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	2.8440 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	2.8440 (mg/L)
	concentration of ground water seepage from East Pit	C_ggp =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.8100 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	57.3785 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	95.6218 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	235.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	235.0000 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.2255 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.1500 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.8100 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	57.3785 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	95.6218 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	235.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	235.0000 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.2255 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	2.8440 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	2.8440 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	2.8440 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	82.4000 (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M_s1 =	3,811.21760 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	14.48734 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.84900 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	3,928.53437 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	24.90123 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	2,499.51897 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	8.42516 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.28020 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.46620 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00003 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	2,556.23334 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	24.91652 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.46620 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	1.09982 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	1.42898 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.48801 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00009 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00011 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00021 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.12067 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00108 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00232 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.06864 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	28,701.62474 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	111.41574 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.38103 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00002 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.87412 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	7,358.41630 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	182.70140 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	42.54136 (mg/s)
mass flux of ground water into USGS Gage	M_g6 =	37.82804 (mg/s)	
mass flux of surface water into Colby Lake	M_scl =	15,212.72160 (mg/s)	
mass flux of ground water into Colby Lake	M_gcl =	94.16768 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M_shl =	17.65920 (mg/s)	
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	3,826.5539 (mg/s)
	mass flux in river at SW-002	M_r2 =	7,779.9895 (mg/s)
	mass flux in river at SW-003	M_r3 =	10,288.6801 (mg/s)
	mass flux in river at SW-004	M_r4 =	12,873.5061 (mg/s)
	mass flux in river at SW-004A	M_r4A =	41,687.8018 (mg/s)
	mass flux in river at SW-005	M_r5 =	49,228.9195 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	49,309.2889 (mg/s)
	mass flux into Colby Lake	M_cl =	64,633.8374 (mg/s)
	High Flow		
	concentration in river at SW-001	C_r1 =	1.58423 (mg/L)
	concentration in river at SW-002	C_r2 =	1.59443 (mg/L)
	concentration in river at SW-003	C_r3 =	1.59646 (mg/L)
	concentration in river at SW-004	C_r4 =	1.59844 (mg/L)
	concentration in river at SW-004A	C_r4A =	1.60105 (mg/L)
	concentration in river at SW-005	C_r5 =	1.60349 (mg/L)
	concentration in river at USGS Gage	C_r6 =	1.60403 (mg/L)
	concentration in Colby Lake	C_cl =	1.62884 (mg/L)



Partridge River Mass-Balance--Mine Site-Proposed Action

Case Parameter	Year 10 Hardness		
Input concentration data	concentration of surface water into SW-001	C_s1 =	110.0000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	110.0000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	110.0000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	110.0000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	110.0000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	110.0000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	110.0000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	110.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	110.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	110.0000 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	66.4200 (mg/L)
	concentration of ground water into SW-002	C_g2 =	66.4200 (mg/L)
	concentration of ground water into SW-003	C_g3 =	66.4200 (mg/L)
	concentration of ground water into SW-004	C_g4 =	66.4200 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	66.4200 (mg/L)
	concentration of ground water into SW-005	C_g5 =	66.4200 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	66.4200 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	66.4200 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	684.5579 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	3,396.4329 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	4,862.3739 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	2,976.4299 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	622.0238 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	43.5200 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	71.5000 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	684.5579 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	3,396.4329 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	4,862.3739 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	2,976.4299 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	622.0238 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	43.5200 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	66.4200 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	66.4200 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	66.4200 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	2,740.0000 (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M_s1 =	262,021.21000 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	338.34348 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	3,113.00000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	270,086.73823 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	581.55406 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	171,841.92893 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	196.76471 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	16.58580 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	23.70642 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00179 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	175,741.04226 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	581.91110 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	23.70642 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	13.92999 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	3.78237 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	94.18314 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00477 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00136 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00057 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	23.28806 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.02527 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.05414 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00002 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	2.28253 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	##### (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	2,602.05112 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	322.02473 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.01500 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	416.66519 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	505,891.12035 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	4,266.88722 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	2,924.71862 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	883.45242 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	##### (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	2,199.23262 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	1,214.07000 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	265,472.5535 (mg/s)
	mass flux in river at SW-002	M_r2 =	536,140.8468 (mg/s)
	mass flux in river at SW-003	M_r3 =	708,219.8334 (mg/s)
	mass flux in river at SW-004	M_r4 =	884,704.0472 (mg/s)
	mass flux in river at SW-004A	M_r4A =	2,861,261.5042 (mg/s)
	mass flux in river at SW-005	M_r5 =	3,371,439.5117 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	3,375,247.6828 (mg/s)
	mass flux into Colby Lake	M_cl =	4,424,535.5954 (mg/s)
	High Flow		
	concentration in river at SW-001	C_r1 =	109.90809 (mg/L)
	concentration in river at SW-002	C_r2 =	109.87630 (mg/L)
	concentration in river at SW-003	C_r3 =	109.89240 (mg/L)
	concentration in river at SW-004	C_r4 =	109.84940 (mg/L)
	concentration in river at SW-004A	C_r4A =	109.88961 (mg/L)
	concentration in river at SW-005	C_r5 =	109.81519 (mg/L)
	concentration in river at USGS Gage	C_r6 =	109.79657 (mg/L)
	concentration in Colby Lake	C_cl =	108.72018 (mg/L)

Partridge River Mass-Balance--Mine Site-Proposed Action

Case		Year 10	
Parameter		Potassium	
Input concentration data	concentration of surface water into SW-001	C_s1 =	1.3000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	1.3000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	1.3000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	1.3000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	1.3000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	1.3000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	1.3000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	1.3000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	1.3000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	2.7000 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	1.7500 (mg/L)
	concentration of ground water into SW-002	C_g2 =	1.7500 (mg/L)
	concentration of ground water into SW-003	C_g3 =	1.7500 (mg/L)
	concentration of ground water into SW-004	C_g4 =	1.7500 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	1.7500 (mg/L)
	concentration of ground water into SW-005	C_g5 =	1.7500 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	1.7500 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	1.7500 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	49.0000 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	38.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	38.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	38.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	38.0000 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	2.2600 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	4.4500 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	49.0000 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	38.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	38.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	38.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	38.0000 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	2.2600 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	1.7500 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	1.7500 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	1.7500 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	36.1000 (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M_s1 =	3,096.61430 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	8.91450 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	76.41000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	3,191.93418 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	15.32249 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	2,030.85916 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	5.18426 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.18557 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.18527 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00002 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	2,076.93959 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	15.33189 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.18527 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.17784 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.23107 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	4.89094 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00004 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00002 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00003 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	1.20935 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00067 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00143 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.03007 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	23,320.07010 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	68.55750 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	23.05022 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00107 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	25.93231 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	5,978.71324 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	112.42175 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	34.56486 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	23.27675 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	12,360.33630 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	57.94425 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	14.34810 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	3,181.9388 (mg/s)
	mass flux in river at SW-002	M_r2 =	6,389.1955 (mg/s)
	mass flux in river at SW-003	M_r3 =	8,425.6097 (mg/s)
	mass flux in river at SW-004	M_r4 =	10,524.6080 (mg/s)
	mass flux in river at SW-004A	M_r4A =	33,963.3542 (mg/s)
	mass flux in river at SW-005	M_r5 =	40,053.3542 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	40,111.1958 (mg/s)
	mass flux into Colby Lake	M_cl =	52,543.8244 (mg/s)
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C_r1 =	1.31735 (mg/L)
	concentration in river at SW-002	C_r2 =	1.30940 (mg/L)
	concentration in river at SW-003	C_r3 =	1.30738 (mg/L)
	concentration in river at SW-004	C_r4 =	1.30679 (mg/L)
	concentration in river at SW-004A	C_r4A =	1.30434 (mg/L)
	concentration in river at SW-005	C_r5 =	1.30463 (mg/L)
	concentration in river at USGS Gage	C_r6 =	1.30481 (mg/L)
	concentration in Colby Lake	C_cl =	1.32565 (mg/L)

Partridge River Mass-Balance--Mine Site-Proposed Action

Case		Year 10	
Parameter		Magnesium	
Input concentration data	concentration of surface water into SW-001	C_s1 =	8.0000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	8.0000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	8.0000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	8.0000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	8.0000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	8.0000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	8.0000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	8.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	8.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	10.5000 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	8.0200 (mg/L)
	concentration of ground water into SW-002	C_g2 =	8.0200 (mg/L)
	concentration of ground water into SW-003	C_g3 =	8.0200 (mg/L)
	concentration of ground water into SW-004	C_g4 =	8.0200 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	8.0200 (mg/L)
	concentration of ground water into SW-005	C_g5 =	8.0200 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	8.0200 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	8.0200 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	38.3462 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	534.4604 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	890.6840 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	471.3674 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	98.5079 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	4.8800 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	9.0100 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	38.3462 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	534.4604 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	890.6840 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	471.3674 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	98.5079 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	4.8800 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	8.0200 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	8.0200 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	8.0200 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	438.0000 (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M_s1 =	19,056.08800 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	40.85388 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	297.15000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	19,642.67187 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	70.22077 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	12,497.59483 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	23.75870 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	2.60993 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	4.34252 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00028 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	12,781.16671 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	70.26388 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	4.34252 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	2.20605 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.59900 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	10.56098 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00087 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00021 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00009 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	2.61135 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00305 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00654 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.36487 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	143,508.12370 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	314.18925 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	18.03852 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00084 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	52.50564 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	36,792.08148 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	515.21282 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	212.70681 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	106.67402 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	76,063.60800 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	265.55022 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	88.29600 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	19,394.0919 (mg/s)
	mass flux in river at SW-002	M_r2 =	39,106.9845 (mg/s)
	mass flux in river at SW-003	M_r3 =	51,635.2908 (mg/s)
	mass flux in river at SW-004	M_r4 =	84,507.4172 (mg/s)
	mass flux in river at SW-004A	M_r4A =	208,400.2751 (mg/s)
	mass flux in river at SW-005	M_r5 =	245,707.5694 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	246,026.9503 (mg/s)
	mass flux into Colby Lake	M_cl =	322,444.4045 (mg/s)
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C_r1 =	8.02933 (mg/L)
	concentration in river at SW-002	C_r2 =	8.01456 (mg/L)
	concentration in river at SW-003	C_r3 =	8.01210 (mg/L)
	concentration in river at SW-004	C_r4 =	8.00957 (mg/L)
	concentration in river at SW-004A	C_r4A =	8.00377 (mg/L)
	concentration in river at SW-005	C_r5 =	8.00324 (mg/L)
	concentration in river at USGS Gage	C_r6 =	8.00324 (mg/L)
	concentration in Colby Lake	C_cl =	8.01636 (mg/L)

Partridge River Mass-Balance--Mine Site-Proposed Action

Case		Year 10	
Parameter		Manganese	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.1500 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.1500 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.1500 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.1500 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.1500 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.1500 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.1500 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.1500 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.1500 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0086 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.1240 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.1240 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.1240 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.1240 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.1240 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.1240 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.1240 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.1240 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.2877 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	40.6249 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	47.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	33.0862 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	6.9145 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.1604 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.1160 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.2877 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	40.6249 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	47.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	33.0862 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	6.9145 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.1604 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.1240 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.1240 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.1240 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	20.1000 (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M_s1 =	357.30165 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.63166 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.24338 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	368.30010 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	1.08571 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	234.32990 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.36734 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.19838 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.22915 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00002 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	239.64688 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	1.08637 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.22915 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.15485 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.04205 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.34711 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00005 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00002 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00001 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.08583 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00005 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00010 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.01674 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	2,690.77732 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	4.85779 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.13532 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.67599 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	689.85153 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	7.96588 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	3.98825 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	1.64932 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	1,426.19265 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	4.10576 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	1.65555 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	358.1767 (mg/s)
	mass flux in river at SW-002	M_r2 =	727.5625 (mg/s)
	mass flux in river at SW-003	M_r3 =	962.5873 (mg/s)
	mass flux in river at SW-004	M_r4 =	1,204.2965 (mg/s)
	mass flux in river at SW-004A	M_r4A =	3,900.7429 (mg/s)
	mass flux in river at SW-005	M_r5 =	4,598.5603 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	4,604.1979 (mg/s)
	mass flux into Colby Lake	M_cl =	6,036.1519 (mg/s)
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C_r1 =	0.14829 (mg/L)
	concentration in river at SW-002	C_r2 =	0.14911 (mg/L)
	concentration in river at SW-003	C_r3 =	0.14938 (mg/L)
	concentration in river at SW-004	C_r4 =	0.14953 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.14981 (mg/L)
	concentration in river at SW-005	C_r5 =	0.14979 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.14977 (mg/L)
	concentration in Colby Lake	C_cl =	0.14870 (mg/L)

Partridge River Mass-Balance--Mine Site-Proposed Action

Case	Year 10		
Parameter	Sodium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	2.5000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	2.5000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	2.5000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	2.5000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	2.5000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	2.5000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	2.5000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	2.5000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	2.5000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	4.8000 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	13.3300 (mg/L)
	concentration of ground water into SW-002	C_g2 =	13.3300 (mg/L)
	concentration of ground water into SW-003	C_g3 =	13.3300 (mg/L)
	concentration of ground water into SW-004	C_g4 =	13.3300 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	13.3300 (mg/L)
	concentration of ground water into SW-005	C_g5 =	13.3300 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	13.3300 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	13.3300 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	214.9687 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	338.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	338.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	178.1118 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	37.2224 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	4.6000 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	7.1900 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	214.9687 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	338.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	338.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	178.1118 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	37.2224 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	4.6000 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	13.3300 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	13.3300 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	13.3300 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	255.0000 (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M_s1 =	5,955.02750 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	67.90302 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	135.84000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	6,138.33496 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	116.71358 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	3,905.49838 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	39.48921 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	1.65056 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	1.64791 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00018 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	3,994.11460 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	116.78523 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	1.64791 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.83358 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.22634 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	9.95502 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00033 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00008 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00003 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	2.46151 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00507 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.01087 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.21242 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	44,846.28866 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	522.21231 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	101.12399 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00471 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	41.89962 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	11,497.52546 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	856.33253 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	66.47088 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	177.30233 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	23,769.87750 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	441.36963 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	27.59250 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	6,158.7705 (mg/s)
	mass flux in river at SW-002	M_r2 =	12,413.8191 (mg/s)
	mass flux in river at SW-003	M_r3 =	16,362.1053 (mg/s)
	mass flux in river at SW-004	M_r4 =	20,488.3585 (mg/s)
	mass flux in river at SW-004A	M_r4A =	65,999.8878 (mg/s)
	mass flux in river at SW-005	M_r5 =	78,353.7458 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	78,597.5190 (mg/s)
	mass flux into Colby Lake	M_cl =	102,836.3586 (mg/s)
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C_r1 =	2.54979 (mg/L)
	concentration in river at SW-002	C_r2 =	2.54408 (mg/L)
	concentration in river at SW-003	C_r3 =	2.53886 (mg/L)
	concentration in river at SW-004	C_r4 =	2.54394 (mg/L)
	concentration in river at SW-004A	C_r4A =	2.53477 (mg/L)
	concentration in river at SW-005	C_r5 =	2.55215 (mg/L)
	concentration in river at USGS Gage	C_r6 =	2.55677 (mg/L)
	concentration in Colby Lake	C_cl =	2.85342 (mg/L)



Partridge River Mass-Balance--Mine Site-Proposed Action

Case	Year 10		
Parameter	Nickel		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0016 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0016 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0016 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0016 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0016 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0016 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0016 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0016 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0033 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0016 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0163 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0163 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0163 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0163 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0163 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0163 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0163 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0163 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0854 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	298.1172 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	496.8155 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	178.8201 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	37.3704 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0080 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0190 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0854 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	298.1172 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	496.8155 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	178.8201 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	37.3704 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0080 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0163 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0163 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0163 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	138.0000 (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M_s1 =	3.71594 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.08293 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.04387 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	3.83032 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.14254 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	2.43703 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.04823 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	1.45580 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	2.42222 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00016 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	2.49233 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.14263 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	2.42222 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.83690 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.22724 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.01725 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00049 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00008 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00003 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00426 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00001 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00001 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.11496 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	27.98408 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.63778 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.04015 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.11072 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	7.17446 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	1.04584 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.04148 (mg/s)
mass flux of ground water into USGS Gage	M_g6 =	0.21654 (mg/s)	
mass flux of surface water into Colby Lake	M_scl =	14.83240 (mg/s)	
mass flux of ground water into Colby Lake	M_gcl =	0.53905 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.03642 (mg/s)	
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	3.8427 (mg/s)
	mass flux in river at SW-002	M_r2 =	7.8166 (mg/s)
	mass flux in river at SW-003	M_r3 =	14.1790 (mg/s)
	mass flux in river at SW-004	M_r4 =	20.4376 (mg/s)
	mass flux in river at SW-004A	M_r4A =	49.2103 (mg/s)
	mass flux in river at SW-005	M_r5 =	57.4306 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	57.6886 (mg/s)
mass flux into Colby Lake	M_cl =	73.0965 (mg/s)	
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C_r1 =	0.00159 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00160 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00220 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00254 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00189 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00187 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00188 (mg/L)
	concentration in Colby Lake	C_cl =	0.00328 (mg/L)



Partridge River Mass-Balance--Mine Site-Proposed Action

Case Parameter	Year 10 Lead		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0005 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0005 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0005 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0005 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0005 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0005 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0005 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0005 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0005 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0002 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0011 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0011 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0011 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0011 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0011 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0011 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0011 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0011 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0102 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.0528 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0528 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0528 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0473 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0007 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0102 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.0528 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0528 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0528 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0473 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0007 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0011 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0011 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0011 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0400 (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M_s1 =	1.19101 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00571 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.00425 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	1.22767 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.00981 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.78110 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00332 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00026 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00	0.00026 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.79882 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.00981 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00	0.00026 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00025 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00029 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00146 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00036 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00003 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	8.96926 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.04388 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.00480 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	2.29951 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.07195 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.01329 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.01490 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	4.75398 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.03708 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00552 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	1.2010 (mg/s)
	mass flux in river at SW-002	M_r2 =	2.4364 (mg/s)
	mass flux in river at SW-003	M_r3 =	3.2234 (mg/s)
	mass flux in river at SW-004	M_r4 =	4.0346 (mg/s)
	mass flux in river at SW-004A	M_r4A =	13.0528 (mg/s)
	mass flux in river at SW-005	M_r5 =	15.4240 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	15.4522 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	20.2488 (mg/s)
	High Flow		
	concentration in river at SW-001	C_r1 =	0.00050 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00050 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00050 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00050 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00050 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00050 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00050 (mg/L)
	concentration in Colby Lake	C_cl =	0.00052 (mg/L)

Partridge River Mass-Balance--Mine Site-Proposed Action

Case	Year 10			
Parameter	Antimony			
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0015 (mg/L)	
	concentration of surface water into SW-002	C_s2 =	0.0015 (mg/L)	
	concentration of surface water into SW-003	C_s3 =	0.0015 (mg/L)	
	concentration of surface water into SW-004	C_s4 =	0.0015 (mg/L)	
	concentration of surface water into SW-004A	C_s4A =	0.0015 (mg/L)	
	concentration of surface water into SW-005	C_s5 =	0.0015 (mg/L)	
	concentration of surface water into USGS Gage	C_s6 =	0.0015 (mg/L)	
	concentration of surface water into Colby Lake	C_scl =	0.0015 (mg/L)	
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0015 (mg/L)	
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0015 (mg/L)	
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)	
	concentration of ground water into SW-001	C_g1 =	0.0015 (mg/L)	
	concentration of ground water into SW-002	C_g2 =	0.0015 (mg/L)	
	concentration of ground water into SW-003	C_g3 =	0.0015 (mg/L)	
	concentration of ground water into SW-004	C_g4 =	0.0015 (mg/L)	
	concentration of ground water into SW-004A	C_g4A =	0.0015 (mg/L)	
	concentration of ground water into SW-005	C_g5 =	0.0015 (mg/L)	
	concentration of ground water into USGS Gage	C_g6 =	0.0015 (mg/L)	
	concentration of ground water into Colby Lake	C_gcl =	0.0015 (mg/L)	
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)	
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)	
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0800 (mg/L)	
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.0800 (mg/L)	
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0800 (mg/L)	
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0750 (mg/L)	
	concentration of liner leakage from LOSP	C_gC4LO =	0.0157 (mg/L)	
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0003 (mg/L)	
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0004 (mg/L)	
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0800 (mg/L)	
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.0800 (mg/L)	
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0800 (mg/L)	
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0750 (mg/L)	
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0157 (mg/L)	
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0003 (mg/L)	
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)	
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0015 (mg/L)	
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0015 (mg/L)	
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0015 (mg/L)	
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0816 (mg/L)	
	Convert concentration to mass flux	High Flow		
		mass flux of surface water into SW-001	M_s1 =	3.57302 (mg/s)
		mass flux of ground water into SW-001	M_g1 =	0.00764 (mg/s)
		mass flux of surface discharges from upstream of PM-1	M_sns =	0.04245 (mg/s)
		mass flux of surface water into SW-002	M_s2 =	3.68300 (mg/s)
mass flux of ground water into SW-002		M_g2 =	0.01313 (mg/s)	
mass flux of surface water into SW-003		M_s3 =	2.34330 (mg/s)	
mass flux of ground water into SW-003		M_g3 =	0.00444 (mg/s)	
mass flux of seepage from East Pit to SW-003		M_gep_003 =	#N/A (mg/s)	
mass flux of liner leakage from Cat 3 stockpile to SW-003		M_gC3_003 =	0.00039 (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-003		M_gC3LO_00 =	0.00039 (mg/s)	
mass flux of liner leakage from Cat 3 sumps to SW-003		M_gC3s_003 =	0.00000 (mg/s)	
mass flux of surface water into SW-004		M_s4 =	2.39647 (mg/s)	
mass flux of ground water into SW-004		M_g4 =	0.01314 (mg/s)	
mass flux of seepage from East Pit to SW-004		M_gep_004 =	#N/A (mg/s)	
mass flux of seepage from West Pit		M_gwp =	#N/A (mg/s)	
mass flux of liner leakage from Cat 3 stockpile to SW-004		M_gC3_004 =	- (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-004		M_gC3LO_00 =	0.00039 (mg/s)	
mass flux of liner leakage from Cat 4 stockpile		M_gC4 =	0.00035 (mg/s)	
mass flux of liner leakage from LOSP		M_gC4LO =	0.00010 (mg/s)	
mass flux of seepage from Overburden (Storage)		M_gOS =	0.00065 (mg/s)	
mass flux of liner leakage from Cat 3LO sumps to SW-004		M_gC3LOs_0 =	0.00000 (mg/s)	
mass flux of liner leakage from Cat 4 sumps		M_gC4s =	0.00000 (mg/s)	
mass flux of liner leakage from LOSP sumps		M_gC4LOs =	0.00000 (mg/s)	
mass flux of seepage from Overburden Ponds - PW1		M_gOp1 =	0.00016 (mg/s)	
mass flux of leakage from Haul Road Pond - PW2		M_gHRp2 =	0.00000 (mg/s)	
mass flux of leakage from Haul Road Pond - PW4		M_gHRp4 =	0.00000 (mg/s)	
mass flux of leakage from RTH Pond - PW3		M_gRTHp =	0.00000 (mg/s)	
mass flux of liner leakage from WWTF pond		M_gWTFp =	0.00007 (mg/s)	
mass flux of surface water into SW-004A		M_s4A =	26.90777 (mg/s)	
mass flux of ground water into SW-004A		M_g4A =	0.05876 (mg/s)	
mass flux of West Pit overflow		M_sms =	#N/A (mg/s)	
mass flux of liner leakage from Cat 1/2 stockpile		M_gC12 =	0.03763 (mg/s)	
mass flux of liner leakage from Cat 1/2 sumps		M_gC12s =	0.00000 (mg/s)	
mass flux of seepage from Overburden (Cat 1/2)		M_gO12 =	0.00233 (mg/s)	
mass flux of seepage from Overburden Pond - PW7		M_gOp7 =	#N/A (mg/s)	
mass flux of surface water into SW-005		M_s5 =	6.89852 (mg/s)	
mass flux of ground water into SW-005		M_g5 =	0.09636 (mg/s)	
mass flux of surface water into USGS Gage		M_s6 =	0.03988 (mg/s)	
mass flux of ground water into USGS Gage		M_g6 =	0.01995 (mg/s)	
mass flux of surface water into Colby Lake		M_scl =	14.26193 (mg/s)	
mass flux of ground water into Colby Lake		M_gcl =	0.04967 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP		M_shl =	0.01656 (mg/s)	
Mass balance at each node		High Flow		
	mass flux in river at SW-001	M_r1 =	3.6231 (mg/s)	
	mass flux in river at SW-002	M_r2 =	7.3192 (mg/s)	
	mass flux in river at SW-003	M_r3 =	9.6678 (mg/s)	
	mass flux in river at SW-004	M_r4 =	12.0791 (mg/s)	
	mass flux in river at SW-004A	M_r4A =	39.0856 (mg/s)	
	mass flux in river at SW-005	M_r5 =	46.0805 (mg/s)	
	mass flux in river at USGS Gage	M_r6 =	46.1403 (mg/s)	
	mass flux into Colby Lake	M_cl =	60.4685 (mg/s)	
Convert mass flux to concentration	High Flow			
	concentration in river at SW-001	C_r1 =	0.00150 (mg/L)	
	concentration in river at SW-002	C_r2 =	0.00150 (mg/L)	
	concentration in river at SW-003	C_r3 =	0.00150 (mg/L)	
	concentration in river at SW-004	C_r4 =	0.00150 (mg/L)	
	concentration in river at SW-004A	C_r4A =	0.00150 (mg/L)	
	concentration in river at SW-005	C_r5 =	0.00150 (mg/L)	
	concentration in river at USGS Gage	C_r6 =	0.00150 (mg/L)	
	concentration in Colby Lake	C_cl =	0.00151 (mg/L)	

Partridge River Mass-Balance--Mine Site-Proposed Action

Case	Year 10		
Parameter	Selenium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0005 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0005 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0005 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0005 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0005 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0005 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0005 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0005 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0005 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0005 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0019 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0019 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0019 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0019 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0019 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0019 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0019 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0019 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0029 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.0029 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0029 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0029 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0029 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0004 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0019 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0029 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.0029 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_g3LOs =	0.0029 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0029 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0029 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0004 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0019 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0019 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0019 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0100 (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M_s1 =	1.19101 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00973 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.01415 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	1.21491 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.01672 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.78110 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00566 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.79882 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.01673 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)	
mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00001 (mg/s)	
mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00001 (mg/s)	
mass flux of liner leakage from LOSP	M_gC4LO =	0.00002 (mg/s)	
mass flux of seepage from Overburden (Storage)	M_gOS =	0.00096 (mg/s)	
mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00000 (mg/s)	
mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)	
mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)	
mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00024 (mg/s)	
mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)	
mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)	
mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)	
mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00001 (mg/s)	
mass flux of surface water into SW-004A	M_s4A =	8.96926 (mg/s)	
mass flux of ground water into SW-004A	M_g4A =	0.07483 (mg/s)	
mass flux of West Pit overflow	M_sms =	#N/A (mg/s)	
mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.00136 (mg/s)	
mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)	
mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.01107 (mg/s)	
mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)	
mass flux of surface water into SW-005	M_s5 =	2.29951 (mg/s)	
mass flux of ground water into SW-005	M_g5 =	0.12270 (mg/s)	
mass flux of surface water into USGS Gage	M_s6 =	0.01329 (mg/s)	
mass flux of ground water into USGS Gage	M_g6 =	0.02540 (mg/s)	
mass flux of surface water into Colby Lake	M_scl =	4.75398 (mg/s)	
mass flux of ground water into Colby Lake	M_gcl =	0.06324 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00552 (mg/s)	
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	1.2149 (mg/s)
	mass flux in river at SW-002	M_r2 =	2.4593 (mg/s)
	mass flux in river at SW-003	M_r3 =	3.2461 (mg/s)
	mass flux in river at SW-004	M_r4 =	4.0629 (mg/s)
	mass flux in river at SW-004A	M_r4A =	13.1194 (mg/s)
	mass flux in river at SW-005	M_r5 =	15.5416 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	15.5803 (mg/s)
mass flux into Colby Lake	M_cl =	20.4030 (mg/s)	
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C_r1 =	0.00050 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00050 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00050 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00050 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00050 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00051 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00051 (mg/L)
concentration in Colby Lake	C_cl =	0.00054 (mg/L)	

Partridge River Mass-Balance--Mine Site-Proposed Action

Case	Year 10		
Parameter	sulfate		
Input concentration data	concentration of surface water into SW-001	C_s1 =	9.0000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	9.0000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	9.0000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	9.0000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	9.0000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	9.0000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	9.0000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	9.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	9.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	22.0000 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	16.1300 (mg/L)
	concentration of ground water into SW-002	C_g2 =	16.1300 (mg/L)
	concentration of ground water into SW-003	C_g3 =	16.1300 (mg/L)
	concentration of ground water into SW-004	C_g4 =	16.1300 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	16.1300 (mg/L)
	concentration of ground water into SW-005	C_g5 =	16.1300 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	16.1300 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	16.1300 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	475.2284 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	9,600.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	9,600.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	9,600.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	3,907.8669 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	35.1700 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	68.3000 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	475.2284 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	9,600.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	9,600.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	9,600.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	3,907.8669 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	35.1700 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	16.1300 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	16.1300 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	16.1300 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	5,026.0000 (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M_s1 =	21,438.09900 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	82.16622 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	622.60000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	22,098.00586 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	141.22956 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	14,059.79419 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	47.78402 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	46.87968 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	46.80464 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00505 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	14,378.81255 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	141.31626 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	46.80464 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	44.92897 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	23.76274 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	76.11262 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_00 =	0.00942 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00438 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00356 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	18.81988 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00614 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.01315 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	4.18685 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	161,446.63916 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	631.90432 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	223.55346 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.01041 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	398.01724 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	41,391.09166 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	1,036.20733 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	239.29516 (mg/s)
mass flux of ground water into USGS Gage	M_g6 =	214.54513 (mg/s)	
mass flux of surface water into Colby Lake	M_scl =	85,571.55900 (mg/s)	
mass flux of ground water into Colby Lake	M_gcl =	534.08043 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M_shl =	99.33300 (mg/s)	
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	22,142.8652 (mg/s)
	mass flux in river at SW-002	M_r2 =	44,382.1006 (mg/s)
	mass flux in river at SW-003	M_r3 =	58,583.3662 (mg/s)
	mass flux in river at SW-004	M_r4 =	73,318.1544 (mg/s)
	mass flux in river at SW-004A	M_r4A =	236,018.2790 (mg/s)
	mass flux in river at SW-005	M_r5 =	278,445.5780 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	278,899.4183 (mg/s)
	mass flux into Colby Lake	M_cl =	365,104.3907 (mg/s)
	High Flow		
	concentration in river at SW-001	C_r1 =	9.16735 (mg/L)
	concentration in river at SW-002	C_r2 =	9.09563 (mg/L)
	concentration in river at SW-003	C_r3 =	9.09021 (mg/L)
	concentration in river at SW-004	C_r4 =	9.10356 (mg/L)
	concentration in river at SW-004A	C_r4A =	9.06446 (mg/L)
	concentration in river at SW-005	C_r5 =	9.06958 (mg/L)
	concentration in river at USGS Gage	C_r6 =	9.07258 (mg/L)
	concentration in Colby Lake	C_cl =	9.38137 (mg/L)

Partridge River Mass-Balance--Mine Site-Proposed Action

Case	Year 10			
Parameter	Thallium			
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0004 (mg/L)	
	concentration of surface water into SW-002	C_s2 =	0.0004 (mg/L)	
	concentration of surface water into SW-003	C_s3 =	0.0004 (mg/L)	
	concentration of surface water into SW-004	C_s4 =	0.0004 (mg/L)	
	concentration of surface water into SW-004A	C_s4A =	0.0004 (mg/L)	
	concentration of surface water into SW-005	C_s5 =	0.0004 (mg/L)	
	concentration of surface water into USGS Gage	C_s6 =	0.0004 (mg/L)	
	concentration of surface water into Colby Lake	C_scl =	0.0004 (mg/L)	
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0004 (mg/L)	
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0003 (mg/L)	
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)	
	concentration of ground water into SW-001	C_g1 =	0.0000 (mg/L)	
	concentration of ground water into SW-002	C_g2 =	0.0000 (mg/L)	
	concentration of ground water into SW-003	C_g3 =	0.0000 (mg/L)	
	concentration of ground water into SW-004	C_g4 =	0.0000 (mg/L)	
	concentration of ground water into SW-004A	C_g4A =	0.0000 (mg/L)	
	concentration of ground water into SW-005	C_g5 =	0.0000 (mg/L)	
	concentration of ground water into USGS Gage	C_g6 =	0.0000 (mg/L)	
	concentration of ground water into Colby Lake	C_gcl =	0.0000 (mg/L)	
	concentration of ground water seepage from East Pit	C_ggp =	#N/A (mg/L)	
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)	
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0000 (mg/L)	
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.0001 (mg/L)	
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0001 (mg/L)	
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0001 (mg/L)	
	concentration of liner leakage from LOSP	C_gC4LO =	0.0001 (mg/L)	
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0000 (mg/L)	
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	- (mg/L)	
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0000 (mg/L)	
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.0001 (mg/L)	
	concentration of liner leakage from Cat 3LO sumps	C_g3LOs =	0.0001 (mg/L)	
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0001 (mg/L)	
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0001 (mg/L)	
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0000 (mg/L)	
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)	
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0000 (mg/L)	
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0000 (mg/L)	
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0000 (mg/L)	
	concentration of liner leakage from WWTF ponc	C_gWTFp =	0.0072 (mg/L)	
	Convert concentration to mass flux	High Flow		
		mass flux of surface water into SW-001	M_s1 =	0.95280 (mg/s)
		mass flux of ground water into SW-001	M_g1 =	0.00002 (mg/s)
		mass flux of surface discharges from upstream of PM-1	M_sns =	0.00809 (mg/s)
mass flux of surface water into SW-002		M_s2 =	0.98213 (mg/s)	
mass flux of ground water into SW-002		M_g2 =	0.00004 (mg/s)	
mass flux of surface water into SW-003		M_s3 =	0.62488 (mg/s)	
mass flux of ground water into SW-003		M_g3 =	0.00001 (mg/s)	
mass flux of seepage from East Pit to SW-003		M_ggp_003 =	#N/A (mg/s)	
mass flux of liner leakage from Cat 3 stockpile to SW-003		M_gC3_003 =	0.00000 (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-003		M_gC3LO_00	0.00000 (mg/s)	
mass flux of liner leakage from Cat 3 sumps to SW-003		M_gC3s_003	0.00000 (mg/s)	
mass flux of surface water into SW-004		M_s4 =	0.63906 (mg/s)	
mass flux of ground water into SW-004		M_g4 =	0.00004 (mg/s)	
mass flux of seepage from East Pit to SW-004		M_ggp_004 =	#N/A (mg/s)	
mass flux of seepage from West Pit		M_gwp =	#N/A (mg/s)	
mass flux of liner leakage from Cat 3 stockpile to SW-004		M_gC3_004 =	- (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-004		M_gC3LO_00	0.00000 (mg/s)	
mass flux of liner leakage from Cat 4 stockpile		M_gC4 =	0.00000 (mg/s)	
mass flux of liner leakage from LOSP		M_gC4LO =	0.00000 (mg/s)	
mass flux of seepage from Overburden (Storage)		M_gOS =	0.00009 (mg/s)	
mass flux of liner leakage from Cat 3LO sumps to SW-004		M_gC3LOs_0	0.00000 (mg/s)	
mass flux of liner leakage from Cat 4 sumps		M_gC4s =	0.00000 (mg/s)	
mass flux of liner leakage from LOSP sumps		M_gC4LOs =	0.00000 (mg/s)	
mass flux of seepage from Overburden Ponds - PW1		M_gOp1 =	0.00002 (mg/s)	
mass flux of leakage from Haul Road Pond - PW2		M_gHRp2 =	0.00000 (mg/s)	
mass flux of leakage from Haul Road Pond - PW4		M_gHRp4 =	0.00000 (mg/s)	
mass flux of leakage from RTH Pond - PW3		M_gRTHp =	0.00000 (mg/s)	
mass flux of liner leakage from WWTF pond		M_gWTFp =	0.00001 (mg/s)	
mass flux of surface water into SW-004A		M_s4A =	7.17541 (mg/s)	
mass flux of ground water into SW-004A		M_g4A =	0.00016 (mg/s)	
mass flux of West Pit overflow		M_sms =	#N/A (mg/s)	
mass flux of liner leakage from Cat 1/2 stockpile		M_gC12 =	0.00001 (mg/s)	
mass flux of liner leakage from Cat 1/2 sumps		M_gC12s =	0.00000 (mg/s)	
mass flux of seepage from Overburden (Cat 1/2)		M_gO12 =	- (mg/s)	
mass flux of seepage from Overburden Pond - PW7		M_gOp7 =	#N/A (mg/s)	
mass flux of surface water into SW-005		M_s5 =	1.83960 (mg/s)	
mass flux of ground water into SW-005		M_g5 =	0.00026 (mg/s)	
mass flux of surface water into USGS Gage		M_s6 =	0.01064 (mg/s)	
mass flux of ground water into USGS Gage		M_g6 =	0.00005 (mg/s)	
mass flux of surface water into Colby Lake		M_scl =	3.80318 (mg/s)	
mass flux of ground water into Colby Lake		M_gcl =	0.00013 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP		M_shl =	0.00441 (mg/s)	
Mass balance at each node	High Flow			
	mass flux in river at SW-001	M_r1 =	0.9609 (mg/s)	
	mass flux in river at SW-002	M_r2 =	1.9431 (mg/s)	
	mass flux in river at SW-003	M_r3 =	2.5680 (mg/s)	
	mass flux in river at SW-004	M_r4 =	3.2072 (mg/s)	
	mass flux in river at SW-004A	M_r4A =	10.3828 (mg/s)	
	mass flux in river at SW-005	M_r5 =	12.2226 (mg/s)	
	mass flux in river at USGS Gage	M_r6 =	12.2333 (mg/s)	
	mass flux into Colby Lake	M_cl =	16.0410 (mg/s)	
Convert mass flux to concentration	High Flow			
	concentration in river at SW-001	C_r1 =	0.00040 (mg/L)	
	concentration in river at SW-002	C_r2 =	0.00040 (mg/L)	
	concentration in river at SW-003	C_r3 =	0.00040 (mg/L)	
	concentration in river at SW-004	C_r4 =	0.00040 (mg/L)	
	concentration in river at SW-004A	C_r4A =	0.00040 (mg/L)	
	concentration in river at SW-005	C_r5 =	0.00040 (mg/L)	
	concentration in river at USGS Gage	C_r6 =	0.00040 (mg/L)	
	concentration in Colby Lake	C_cl =	0.00039 (mg/L)	

Partridge River Mass-Balance--Mine Site-Proposed Action

Case		Year 10	
Parameter		Vanadium	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0009 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0009 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0009 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0009 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0009 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0009 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0009 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0009 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0009 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0043 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0043 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0043 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0043 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0043 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0043 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0043 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0043 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0043 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.3148 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	1.1301 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	1.8834 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0364 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0076 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0017 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0014 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.3148 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	1.1301 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	1.8834 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0364 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0076 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0017 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0043 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0043 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0043 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	2.5932 (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M_s1 =	2.14381 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.02190 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.12169 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	2.20980 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.03765 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	1.40598 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.01274 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00552 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00918 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	1.43788 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.03767 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00918 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00017 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00005 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00374 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00093 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00216 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	16.14466 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.16846 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.14806 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.00816 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	4.13911 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.27624 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.02393 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.05719 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	8.55716 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.14238 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00993 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	2.2874 (mg/s)
	mass flux in river at SW-002	M_r2 =	4.5349 (mg/s)
	mass flux in river at SW-003	M_r3 =	5.9683 (mg/s)
	mass flux in river at SW-004	M_r4 =	7.4601 (mg/s)
	mass flux in river at SW-004A	M_r4A =	23.9294 (mg/s)
	mass flux in river at SW-005	M_r5 =	28.3448 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	28.4259 (mg/s)
	mass flux into Colby Lake	M_cl =	37.1353 (mg/s)
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C_r1 =	0.00095 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00093 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00093 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00093 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00092 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00092 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00092 (mg/L)
	concentration in Colby Lake	C_cl =	0.00105 (mg/L)



Partridge River Mass-Balance--Mine Site-Proposed Action

Case		Year 10	
Parameter		Zinc	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0160 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0160 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0160 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0160 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0160 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0160 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0160 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0160 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0620 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0073 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0275 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0275 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0275 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0275 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0275 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0275 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0275 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0275 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0900 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	16.0512 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	26.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	26.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	26.0000 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0046 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0030 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0900 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	16.0512 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	26.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	26.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	26.0000 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0046 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0275 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0275 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0275 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	12.3000 (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M_s1 =	38.11218 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.14009 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.20744 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	39.28534 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.24078 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	24.99519 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.08147 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.07838 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00	0.12676 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00001 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	25.56233 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.24093 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00	0.12676 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.12168 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.15810 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00987 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0	0.00003 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00001 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00002 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00244 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00001 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00002 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.01025 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	287.01625 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	1.07733 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.04234 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.01748 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	73.58416 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	1.76663 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.42541 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.36578 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	152.12722 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.91055 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.68429 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	38.4597 (mg/s)
	mass flux in river at SW-002	M_r2 =	77.9858 (mg/s)
	mass flux in river at SW-003	M_r3 =	103.2676 (mg/s)
	mass flux in river at SW-004	M_r4 =	129.5001 (mg/s)
	mass flux in river at SW-004A	M_r4A =	417.6535 (mg/s)
	mass flux in river at SW-005	M_r5 =	493.0043 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	493.7955 (mg/s)
	mass flux into Colby Lake	M_cl =	647.5175 (mg/s)
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C_r1 =	0.01592 (mg/L)
	concentration in river at SW-002	C_r2 =	0.01598 (mg/L)
	concentration in river at SW-003	C_r3 =	0.01602 (mg/L)
	concentration in river at SW-004	C_r4 =	0.01608 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.01604 (mg/L)
	concentration in river at SW-005	C_r5 =	0.01606 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.01606 (mg/L)
	concentration in Colby Lake	C_cl =	0.01649 (mg/L)

***Appendix H.4***  
***Partridge River***  
***Proposed Action***  
***Year 15***

## Partridge River Mass-Balance Model -Mine Site - Proposed Action

### FLOWS

Case	Year 15		
Flows	Low Flow Conditions (no surface runoff)		
Total flow in Partridge River	flow in river at SW-001	Q_r1_L =	1.18 (cfs)
	flow in river at SW-002	Q_r2_L =	1.48 (cfs)
	flow in river at SW-003	Q_r3_L =	1.59 (cfs)
	flow in river at SW-004	Q_r4_L =	2.00 (cfs)
	flow in river at SW-004A	Q_r4a_L =	3.44 (cfs)
	flow in river at SW-005	Q_r5_L =	5.71 (cfs)
	flow in river at USGS Gage	Q_r6_L =	6.18 (cfs)
	total flow into Colby Lake	Q_cl_L =	7.74 (cfs)
	flow check	Q_ck_L =	7.74 (cfs)
Input flow data	surface water flow into SW-001	Q_s1_L =	- (cfs)
	surface water flow into SW-002	Q_s2_L =	- (cfs)
	surface water flow into SW-003	Q_s3_L =	- (cfs)
	surface water flow into SW-004	Q_s4_L =	- (cfs)
	surface water flow into SW-004A	Q_s4a_L =	- (cfs)
	surface water flow into SW-005	Q_s5_L =	- (cfs)
	surface water flow into USGS Gage	Q_s6_L =	- (cfs)
	surface water flow into Colby Lake	Q_scl_L =	- (cfs)
	surface water inflow from Hoyt Lakes WWTP	Q_shl_L =	0.39 (cfs)
	surface water inflow from discharges upstream of PM-1	Q_sns_L =	1.00 (cfs)
	West Pit overflow	Q_sms_L =	- (cfs)
	ground water flow into SW-001	Q_g1_L =	0.18 (cfs)
	ground water flow into SW-002	Q_g2_L =	0.30 (cfs)
	ground water flow into SW-003	Q_g3_L =	0.11 (cfs)
	ground water flow into SW-004	Q_g4_L =	0.31 (cfs)
	ground water flow into SW-004A	Q_g4a_L =	1.39 (cfs)
	ground water flow into SW-005	Q_g5_L =	2.27 (cfs)
	ground water flow into USGS Gage	Q_g6_L =	0.47 (cfs)
	ground water flow into Colby Lake	Q_gcl_L =	1.17 (cfs)
	ground water seepage from East Pit to SW-003	Q_gep_003_L =	- (cfs)
	ground water seepage from East Pit to SW-004	Q_gep_004_L =	- (cfs)
	ground water seepage from West Pit	Q_gwp_L =	- (cfs)
	ground water liner leakage from Cat 1/2 stockpile	Q_gC12_L =	0.0061 (cfs)
	ground water liner leakage from Cat 3 stockpile to SW-003	Q_gC3_003_L =	0.0000 (cfs)
	ground water liner leakage from Cat 3 stockpile to SW-004	Q_gC3_004_L =	- (cfs)
	ground water liner leakage from Cat 3LO stockpile to SW-003	Q_gC3LO_003_L =	0.0000 (cfs)
	ground water liner leakage from Cat 3LO stockpile to SW-004	Q_gC3LO_004_L =	0.0000 (cfs)
	ground water liner leakage from Cat 4 stockpile	Q_gC4_L =	0.0000 (cfs)
	ground water liner leakage from LO SP	Q_gC4LO_L =	0.0000 (cfs)
	ground water seepage from Overburden Storage	Q_gOS_L =	0.0765 (cfs)
	ground water seepage from Overburden (Cat 1/2)	Q_gO12_L =	0.0457 (cfs)
	ground water liner leakage from Cat 1/2 sumps	Q_gC12s_L =	0.0000 (cfs)
	ground water liner leakage from Cat 3 sumps	Q_gC3s_L =	0.0000 (cfs)
	ground water liner leakage from Cat 3LO sumps	Q_gC3LOs_L =	0.0000 (cfs)
	ground water liner leakage from Cat 4 sumps	Q_gC4s_L =	0.0000 (cfs)
	ground water liner leakage from LO SP sumps	Q_gC4LOs_L =	0.0000 (cfs)
	ground water seepage from Overburden pond - PW1	Q_gOp1_L =	0.0189 (cfs)
	ground water seepage from Overburden pond - PW7	Q_gOp7_L =	- (cfs)
	ground water leakage from Haul Road pond - PW2	Q_gHRp2_L =	0.0000 (cfs)
	ground water leakage from Haul Road pond - PW4	Q_gHRp4_L =	0.0000 (cfs)
	ground water leakage from RTH pond - PW3	Q_gRTHp_L =	0.0000 (cfs)
	ground water liner leakage from WWTF pond	Q_gWTFp_L =	0.000008 (cfs)

Partridge River Mass-Balance Model -Mine Site - Proposed Action

Case	Year 15		
Parameter	Silver		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0001 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0001 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0001 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0001 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0001 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0001 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0001 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0001 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0001 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0001 (mg/L)
	concentration of West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0006 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0006 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0006 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0006 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0006 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0006 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0006 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0006 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	0.0007 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	0.0007 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0007 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0007 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.0007 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	- (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	0.0007 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C gC3s =	0.0007 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.0007 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0007 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0007 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	- (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0006 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0006 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0006 (mg/L)
	concentration of liner leakage from WWTF pond	C gWTFp =	0.0031 (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M s1 =	- (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.00280 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.00340 (mg/s)
	mass flux of surface water into SW-002	M s2 =	- (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.00471 (mg/s)
	mass flux of surface water into SW-003	M s3 =	- (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.00167 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep 003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M gC3 003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO 003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M gC3s 003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	- (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.00488 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep 004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M gC3 004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO 004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	- (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs 004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00000 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.02158 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M gC12 =	0.00012 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	- (mg/s)
	mass flux of ground water into SW-005	M g5 =	0.03533 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.00732 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	0.01821 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.00110 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M r1 =	0.0062 (mg/s)
	mass flux in river at SW-002	M r2 =	0.0109 (mg/s)
	mass flux in river at SW-003	M r3 =	0.0126 (mg/s)
	mass flux in river at SW-004	M r4 =	0.0175 (mg/s)
	mass flux in river at SW-004A	M r4A =	0.0392 (mg/s)
	mass flux in river at SW-005	M r5 =	0.0745 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M r6 =	0.0818 (mg/s)
	mass flux into Colby Lake	M cl =	0.1011 (mg/s)
	Low Flow		
	concentration in river at SW-001	C r1 =	0.00019 (mg/L)
	concentration in river at SW-002	C r2 =	0.00026 (mg/L)
	concentration in river at SW-003	C r3 =	0.00028 (mg/L)
	concentration in river at SW-004	C r4 =	0.00031 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00040 (mg/L)
	concentration in river at SW-005	C r5 =	0.00046 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00047 (mg/L)
	concentration in Colby Lake	C cl =	0.00015 (mg/L)

Partridge River Mass-Balance Model -Mine Site - Proposed Action

Case		Year 15	
Parameter		Aluminum	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0700 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0700 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0700 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0700 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0700 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0700 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0700 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0700 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0700 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0173 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.1250 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.1250 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.1250 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.1250 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.1250 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.1250 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.1250 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.1250 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	1.6800 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	83.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	83.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	83.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	83.0000 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.4106 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.1400 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	1.6800 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	83.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	83.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	83.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	83.0000 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.4106 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.1250 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.1250 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.1250 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	53.9000 (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.63675 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.48959 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	1.06948 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.38019 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.06586 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.01197 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00004 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	1.10912 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.01197 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00745 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.01092 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.88859 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00008 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00004 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00008 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.21972 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00005 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00010 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.01157 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	4.90461 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.29239 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00004 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.18099 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	8.03013 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	1.66263 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	4.13888 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.77259 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	1.1263 (mg/s)
	mass flux in river at SW-002	M_r2 =	2.1958 (mg/s)
	mass flux in river at SW-003	M_r3 =	2.8539 (mg/s)
	mass flux in river at SW-004	M_r4 =	4.9136 (mg/s)
	mass flux in river at SW-004A	M_r4A =	10.2916 (mg/s)
	mass flux in river at SW-005	M_r5 =	18.3218 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	19.9844 (mg/s)
	mass flux into Colby Lake	M_cl =	24.8958 (mg/s)
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C_r1 =	0.03373 (mg/L)
	concentration in river at SW-002	C_r2 =	0.05234 (mg/L)
	concentration in river at SW-003	C_r3 =	0.05899 (mg/L)
	concentration in river at SW-004	C_r4 =	0.08686 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.10580 (mg/L)
	concentration in river at SW-005	C_r5 =	0.11344 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.11432 (mg/L)
	concentration in Colby Lake	C_cl =	0.07639 (mg/L)

**Partridge River Mass-Balance Model -Mine Site - Proposed Action**

Case		Year 15	
Parameter		Arsenic	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0021 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0021 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0021 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0021 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0021 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0021 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0021 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0021 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0021 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0065 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0022 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0022 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0022 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0022 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0022 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0022 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0022 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0022 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.7100 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.7100 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.7100 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.7066 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.2847 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0016 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0027 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.7100 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.7100 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.7100 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.7066 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.2847 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0016 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0022 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0022 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0022 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.7100 (mg/L)
<b>Low Flow</b>			
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.01100 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.18395 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.01848 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00657 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00056 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00010 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.01917 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00010 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00006 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00004 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00338 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00083 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00015 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.08475 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.12357 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00002 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.00349 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.13876 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.02873 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.07152 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.02329 (mg/s)
<b>Low Flow</b>			
Mass balance at each node	mass flux in river at SW-001	M_r1 =	0.1950 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.2134 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.2207 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.2444 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.4562 (mg/s)
	mass flux in river at SW-005	M_r5 =	0.5950 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	0.6237 (mg/s)
	mass flux into Colby Lake	M_cl =	0.7185 (mg/s)
<b>Low Flow</b>			
Convert mass flux to concentration	concentration in river at SW-001	C_r1 =	0.00584 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00509 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00490 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00432 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00469 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00368 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00357 (mg/L)
	concentration in Colby Lake	C_cl =	0.00228 (mg/L)



Partridge River Mass-Balance Model -Mine Site - Proposed Action

Case	Year 15		
Parameter	Boron		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0450 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0450 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0450 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0450 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0450 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0450 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0450 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0450 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0450 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0960 (mg/L)
	concentration of West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0870 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0870 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0870 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0870 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0870 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0870 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0870 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0870 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	0.7600 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	0.7600 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.7600 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.7600 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.7600 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0622 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	0.0370 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	0.7600 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C gC3s =	0.7600 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.7600 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.7600 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.7600 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0622 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0870 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0870 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0870 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	1.0700 (mg/L)
			Low Flow
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	(mg/s)
	mass flux of ground water into SW-001	M g1 =	0.44318 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	2.71680 (mg/s)
	mass flux of surface water into SW-002	M s2 =	(mg/s)
	mass flux of ground water into SW-002	M g2 =	0.74436 (mg/s)
	mass flux of surface water into SW-003	M s3 =	(mg/s)
	mass flux of ground water into SW-003	M g3 =	0.26461 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M gC3_003 =	0.00060 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00011 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	(mg/s)
	mass flux of ground water into SW-004	M g4 =	0.77195 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00011 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00007 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00010 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.13461 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.03328 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00003 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00007 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00023 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M g4A =	3.41361 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.13227 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00002 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.04783 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	- (mg/s)
	mass flux of ground water into SW-005	M g5 =	5.58897 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	- (mg/s)
	mass flux of surface water into USGS Gage	M g6 =	1.15719 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	2.88066 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.49667 (mg/s)
			Low Flow
Mass balance at each node	mass flux in river at SW-001	M r1 =	3.1600 (mg/s)
	mass flux in river at SW-002	M r2 =	3.9043 (mg/s)
	mass flux in river at SW-003	M r3 =	4.1697 (mg/s)
	mass flux in river at SW-004	M r4 =	5.1101 (mg/s)
	mass flux in river at SW-004A	M r4A =	8.7038 (mg/s)
	mass flux in river at SW-005	M r5 =	14.2928 (mg/s)
	mass flux in river at USGS Gage	M r6 =	15.4500 (mg/s)
	mass flux into Colby Lake	M cl =	18.8273 (mg/s)
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C r1 =	0.09463 (mg/L)
	concentration in river at SW-002	C r2 =	0.09307 (mg/L)
	concentration in river at SW-003	C r3 =	0.09268 (mg/L)
	concentration in river at SW-004	C r4 =	0.09034 (mg/L)
	concentration in river at SW-004A	C r4A =	0.08948 (mg/L)
	concentration in river at SW-005	C r5 =	0.08849 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.08838 (mg/L)
	concentration in Colby Lake	C cl =	0.05098 (mg/L)

**Partridge River Mass-Balance Model -Mine Site - Proposed Action**

Case		Year 15	
Parameter		Barium	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0077 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0077 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0077 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0077 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0077 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0077 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0077 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0077 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0077 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0050 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0219 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0219 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0219 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0219 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0219 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0219 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0219 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0219 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.1900 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.1900 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.1900 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.1900 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.1900 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0168 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0140 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.1900 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.1900 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.1900 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.1900 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.1900 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0168 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0219 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0219 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0219 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.3000 (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.11166 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.14150 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.18754 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.06667 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00015 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00003 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.19450 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00003 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00002 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00002 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.03643 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00901 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00001 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00002 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00006 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.86007 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.03307 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.01810 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	1.40816 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.29156 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.72579 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.08476 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	0.2532 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.4407 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.5076 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.7476 (mg/s)
	mass flux in river at SW-004A	M_r4A =	1.6589 (mg/s)
	mass flux in river at SW-005	M_r5 =	3.0671 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	3.3586 (mg/s)
	mass flux into Colby Lake	M_cl =	4.1692 (mg/s)
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C_r1 =	0.00758 (mg/L)
	concentration in river at SW-002	C_r2 =	0.01051 (mg/L)
	concentration in river at SW-003	C_r3 =	0.01128 (mg/L)
	concentration in river at SW-004	C_r4 =	0.01322 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.01705 (mg/L)
	concentration in river at SW-005	C_r5 =	0.01899 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.01921 (mg/L)
	concentration in Colby Lake	C_cl =	0.00934 (mg/L)

Partridge River Mass-Balance Model -Mine Site - Proposed Action

Case		Year 15	
Parameter		Beryllium	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0001 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0001 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0001 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0001 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0001 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0001 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0001 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0001 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0001 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0001 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0001 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0001 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0001 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0001 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0001 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0001 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0001 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0001 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.0023 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0023 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0023 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0023 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	- (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.0023 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0023 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0023 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0023 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	- (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0001 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0001 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0001 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0027 (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00074 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.00283 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.00124 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00044 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.00129 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	- (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00000 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.00569 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.00003 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.00931 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.00193 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.00480 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00110 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	0.0036 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.0048 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.0053 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.0065 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.0123 (mg/s)
	mass flux in river at SW-005	M_r5 =	0.0216 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	0.0235 (mg/s)
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C_r1 =	0.00011 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00011 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00012 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00012 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00013 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00013 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00013 (mg/L)
	concentration in Colby Lake	C_cl =	0.00010 (mg/L)

Partridge River Mass-Balance Model -Mine Site - Proposed Action

Case	Year 15			
Parameter	Calcium			
Input concentration data	concentration of surface water into SW-001	C s1 =	17.0000 (mg/L)	
	concentration of surface water into SW-002	C s2 =	17.0000 (mg/L)	
	concentration of surface water into SW-003	C s3 =	17.0000 (mg/L)	
	concentration of surface water into SW-004	C s4 =	17.0000 (mg/L)	
	concentration of surface water into SW-004A	C s4A =	17.0000 (mg/L)	
	concentration of surface water into SW-005	C s5 =	17.0000 (mg/L)	
	concentration of surface water into USGS Gage	C s6 =	17.0000 (mg/L)	
	concentration of surface water into Colby Lake	C scl =	17.0000 (mg/L)	
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	17.0000 (mg/L)	
	concentration of surface water discharges from upstream of PM-1	C sns =	24.5000 (mg/L)	
	concentration of West Pit overflow	C sms =	#N/A (mg/L)	
	concentration of ground water into SW-001	C g1 =	14.7900 (mg/L)	
	concentration of ground water into SW-002	C g2 =	14.7900 (mg/L)	
	concentration of ground water into SW-003	C g3 =	14.7900 (mg/L)	
	concentration of ground water into SW-004	C g4 =	14.7900 (mg/L)	
	concentration of ground water into SW-004A	C g4A =	14.7900 (mg/L)	
	concentration of ground water into SW-005	C g5 =	14.7900 (mg/L)	
	concentration of ground water into USGS Gage	C g6 =	14.7900 (mg/L)	
	concentration of ground water into Colby Lake	C gcl =	14.7900 (mg/L)	
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)	
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)	
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	540.0000 (mg/L)	
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	480.0000 (mg/L)	
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	480.0000 (mg/L)	
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	480.0000 (mg/L)	
	concentration of liner leakage from LOSP	C gC4LO =	480.0000 (mg/L)	
	concentration of seepage from Overburden (Storage)	C gOS =	9.3700 (mg/L)	
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	15.8000 (mg/L)	
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	540.0000 (mg/L)	
	concentration of liner leakage from Cat 3 sumps	C gC3s =	480.0000 (mg/L)	
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	480.0000 (mg/L)	
	concentration of liner leakage from Cat 4 sumps	C gC4s =	480.0000 (mg/L)	
	concentration of liner leakage from LOSP sumps	C gC4LOs =	480.0000 (mg/L)	
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	9.3700 (mg/L)	
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)	
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	14.7900 (mg/L)	
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	14.7900 (mg/L)	
	concentration of leakage from RTH Pond - PW3	C gRTHp =	14.7900 (mg/L)	
	concentration of liner leakage from WWTF ponc	C_gWTFp =	622.0000 (mg/L)	
	Convert concentration to mass flux	Low Flow		
		mass flux of surface water into SW-001	M s1 =	(mg/s)
		mass flux of ground water into SW-001	M g1 =	75.34026 (mg/s)
		mass flux of surface discharges from upstream of PM-1	M sns =	693.35000 (mg/s)
mass flux of surface water into SW-002		M s2 =	(mg/s)	
mass flux of ground water into SW-002		M g2 =	126.54143 (mg/s)	
mass flux of surface water into SW-003		M s3 =	(mg/s)	
mass flux of ground water into SW-003		M g3 =	44.98349 (mg/s)	
mass flux of seepage from East Pit to SW-003		M gep 003 =	#N/A (mg/s)	
mass flux of liner leakage from Cat 3 stockpile to SW-003		M gC3 003 =	0.38089 (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-003		M gC3LO 00 =	0.06921 (mg/s)	
mass flux of liner leakage from Cat 3 sumps to SW-003		M gC3s 003 =	0.00025 (mg/s)	
mass flux of surface water into SW-004		M s4 =	(mg/s)	
mass flux of ground water into SW-004		M g4 =	131.23090 (mg/s)	
mass flux of seepage from East Pit to SW-004		M gep 004 =	#N/A (mg/s)	
mass flux of seepage from West Pit		M gwp =	#N/A (mg/s)	
mass flux of liner leakage from Cat 3 stockpile to SW-004		M gC3 004 =	- (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-004		M gC3LO 00 =	0.06921 (mg/s)	
mass flux of liner leakage from Cat 4 stockpile		M gC4 =	0.04309 (mg/s)	
mass flux of liner leakage from LOSP		M gC4LO =	0.06315 (mg/s)	
mass flux of seepage from Overburden (Storage)		M gOS =	20.27794 (mg/s)	
mass flux of liner leakage from Cat 3LO sumps to SW-004		M gC3LOs 0 =	0.00047 (mg/s)	
mass flux of liner leakage from Cat 4 sumps		M gC4s =	0.00022 (mg/s)	
mass flux of liner leakage from LOSP sumps		M gC4LOs =	0.00044 (mg/s)	
mass flux of seepage from Overburden Ponds - PW1		M gOp1 =	5.01400 (mg/s)	
mass flux of leakage from Haul Road Pond - PW2		M gHRp2 =	0.00563 (mg/s)	
mass flux of leakage from Haul Road Pond - PW4		M gHRp4 =	0.01206 (mg/s)	
mass flux of leakage from RTH Pond - PW3		M gRTHp =	0.00000 (mg/s)	
mass flux of liner leakage from WWTF pond		M gWTFp =	0.13346 (mg/s)	
mass flux of surface water into SW-004A		M s4A =	- (mg/s)	
mass flux of ground water into SW-004A		M g4A =	580.31365 (mg/s)	
mass flux of West Pit overflow		M sms =	#N/A (mg/s)	
mass flux of liner leakage from Cat 1/2 stockpile		M gC12 =	93.98106 (mg/s)	
mass flux of liner leakage from Cat 1/2 sumps		M gC12s =	0.01183 (mg/s)	
mass flux of seepage from Overburden (Cat 1/2)		M gO12 =	20.42604 (mg/s)	
mass flux of seepage from Overburden Pond - PW7		M gOp7 =	#N/A (mg/s)	
mass flux of surface water into SW-005		M s5 =	- (mg/s)	
mass flux of ground water into SW-005		M g5 =	950.12439 (mg/s)	
mass flux of surface water into USGS Gage		M s6 =	- (mg/s)	
mass flux of ground water into USGS Gage		M g6 =	196.72179 (mg/s)	
mass flux of surface water into Colby Lake		M scl =	- (mg/s)	
mass flux of ground water into Colby Lake		M gcl =	489.71169 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP		M shl =	187.62900 (mg/s)	
Mass balance at each node	Low Flow			
	mass flux in river at SW-001	M r1 =	768.6903 (mg/s)	
	mass flux in river at SW-002	M r2 =	895.2317 (mg/s)	
	mass flux in river at SW-003	M r3 =	940.6655 (mg/s)	
	mass flux in river at SW-004	M r4 =	1,097.5163 (mg/s)	
	mass flux in river at SW-004A	M r4A =	1,792.2489 (mg/s)	
	mass flux in river at SW-005	M r5 =	2,742.3733 (mg/s)	
	mass flux in river at USGS Gage	M r6 =	2,939.0951 (mg/s)	
	mass flux into Colby Lake	M cl =	3,616.4358 (mg/s)	
Convert mass flux to concentration	Low Flow			
	concentration in river at SW-001	C r1 =	23.01881 (mg/L)	
	concentration in river at SW-002	C r2 =	21.34051 (mg/L)	
	concentration in river at SW-003	C r3 =	20.90726 (mg/L)	
	concentration in river at SW-004	C r4 =	19.40231 (mg/L)	
	concentration in river at SW-004A	C r4A =	18.42550 (mg/L)	
	concentration in river at SW-005	C r5 =	16.97948 (mg/L)	
	concentration in river at USGS Gage	C r6 =	16.81289 (mg/L)	
	concentration in Colby Lake	C cl =	16.92928 (mg/L)	

**Partridge River Mass-Balance Model -Mine Site - Proposed Action**

Case		Year 15	
Parameter		Cadmium	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0001 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0001 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0001 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0001 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0001 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0001 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0001 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0001 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0001 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0001 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0001 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0001 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0001 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0001 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0001 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0001 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0001 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0001 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.0149 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0149 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0149 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0149 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0001 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.0149 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0149 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0149 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0149 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0001 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0001 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0001 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0001 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0100 (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00051 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.00283 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.00086 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00030 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.00089 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00013 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00003 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00000 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.00392 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.00003 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.00642 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.00133 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.00331 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00110 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	0.0033 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.0042 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.0045 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.0056 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.0095 (mg/s)
	mass flux in river at SW-005	M_r5 =	0.0160 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	0.0173 (mg/s)
	mass flux into Colby Lake	M_cl =	0.0217 (mg/s)
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C_r1 =	0.00010 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00010 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00010 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00010 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00010 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00010 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00010 (mg/L)
	concentration in Colby Lake	C_cl =	0.00010 (mg/L)

Partridge River Mass-Balance Model -Mine Site - Proposed Action

Case Parameter	Year 15 Chloride		
Input concentration data	concentration of surface water into SW-001	C_s1 =	8.0000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	8.0000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	8.0000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	8.0000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	8.0000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	8.0000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	8.0000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	8.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	8.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	1.6000 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	6.6000 (mg/L)
	concentration of ground water into SW-002	C_g2 =	6.6000 (mg/L)
	concentration of ground water into SW-003	C_g3 =	6.6000 (mg/L)
	concentration of ground water into SW-004	C_g4 =	6.6000 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	6.6000 (mg/L)
	concentration of ground water into SW-005	C_g5 =	6.6000 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	6.6000 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	6.6000 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	- (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	9.3609 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	26.7201 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.4131 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.3982 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	5.3500 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	2.3300 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	- (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	9.3609 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	26.7201 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.4131 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.3982 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	5.3500 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	6.6000 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	6.6000 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	6.6000 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	14.1000 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	33.62040 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	45.28000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	56.46879 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	20.07377 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00743 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00385 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	55.56146 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00385 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00004 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00005 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	11.57812 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00003 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	2.86285 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00251 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00538 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00303 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	258.96350 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	- (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	3.01219 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	423.99060 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	87.78660 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	218.53260 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	88.29600 (mg/s)
Mass balance at each node	mass flux in river at SW-001	M_r1 =	78.9004 (mg/s)
	mass flux in river at SW-002	M_r2 =	135.3692 (mg/s)
	mass flux in river at SW-003	M_r3 =	155.4542 (mg/s)
	mass flux in river at SW-004	M_r4 =	228.4716 (mg/s)
	mass flux in river at SW-004A	M_r4A =	490.4473 (mg/s)
	mass flux in river at SW-005	M_r5 =	914.4379 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	1,002.2245 (mg/s)
	mass flux into Colby Lake	M_cl =	1,309.0531 (mg/s)
Convert mass flux to concentration	concentration in river at SW-001	C_r1 =	2.36271 (mg/L)
	concentration in river at SW-002	C_r2 =	3.22693 (mg/L)
	concentration in river at SW-003	C_r3 =	3.45513 (mg/L)
	concentration in river at SW-004	C_r4 =	4.03901 (mg/L)
	concentration in river at SW-004A	C_r4A =	5.04212 (mg/L)
	concentration in river at SW-005	C_r5 =	5.66177 (mg/L)
	concentration in river at USGS Gage	C_r6 =	5.73316 (mg/L)
	concentration in Colby Lake	C_cl =	7.70426 (mg/L)

7.85885



**Partridge River Mass-Balance Model -Mine Site - Proposed Action**

Case		Year 15	
Parameter		Cobalt	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0005 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0005 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0005 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0005 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0005 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0005 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0005 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0005 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0005 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0005 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0017 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0017 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0017 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0017 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0017 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0017 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0017 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0017 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0520 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	44.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	44.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	44.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	20.3955 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0011 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0013 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0520 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	44.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	44.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	44.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	20.3955 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0011 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0017 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0017 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0017 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	17.1000 (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00841 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.01415 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.01412 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00502 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.03491 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00634 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00002 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.01464 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00634 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00395 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00268 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00240 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00004 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00002 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00002 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00059 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00367 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.06474 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.00905 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.00168 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.10600 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.02195 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.05463 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00552 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	0.0226 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.0367 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.0830 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.1174 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.1928 (mg/s)
	mass flux in river at SW-005	M_r5 =	0.2988 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	0.3208 (mg/s)
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C_r1 =	0.00068 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00087 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00184 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00207 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00198 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00185 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00183 (mg/L)
	concentration in Colby Lake	C_cl =	0.00068 (mg/L)

Partridge River Mass-Balance Model -Mine Site - Proposed Action

Case	Year 15		
Parameter	Copper		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0017 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0017 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0017 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0017 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0017 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0017 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0017 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0017 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0190 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0012 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0030 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0030 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0030 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0030 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0030 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0030 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0030 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0030 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0920 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	202.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	202.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	9.1376 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	3.6813 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0214 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0170 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0920 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	202.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	202.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	9.1376 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	3.6813 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0214 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0030 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0030 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0030 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	27.0000 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.01503 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.03509 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.02524 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00897 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.16029 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.02913 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00011 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.02618 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.02913 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00082 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00048 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.04640 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00020 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.01147 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00579 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.11575 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.01601 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.02198 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.18951 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.03924 (mg/s)
mass flux of surface water into Colby Lake	M_scl =	- (mg/s)	
mass flux of ground water into Colby Lake	M_gcl =	0.09768 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.20970 (mg/s)	
Mass balance at each node			Low Flow
	mass flux in river at SW-001	M_r1 =	0.0501 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.0754 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.2739 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.3944 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.5482 (mg/s)
	mass flux in river at SW-005	M_r5 =	0.7377 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	0.7769 (mg/s)
mass flux into Colby Lake	M_cl =	1.0843 (mg/s)	
Convert mass flux to concentration			Low Flow
	concentration in river at SW-001	C_r1 =	0.00150 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00180 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00609 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00697 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00564 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00457 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00444 (mg/L)
concentration in Colby Lake	C_cl =	0.00218 (mg/L)	

**Partridge River Mass-Balance Model -Mine Site - Proposed Action**

Case		Year 15	
Parameter		Fluoride	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0700 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0700 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0700 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0700 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0700 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0700 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0700 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0700 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0700 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.1400 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.2800 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.2800 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.2800 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.2800 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.2800 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.2800 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.2800 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.2800 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0621 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.0622 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0622 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0622 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0622 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.2239 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.4200 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0621 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.0622 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0622 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0622 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0622 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.2239 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.2800 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.2800 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.2800 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	30.1000 (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	1.42632 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	3.96200 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	2.39565 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.85161 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00005 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	2.48443 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00001 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.48453 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.11981 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00011 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00023 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00646 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	10.98633 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.01081 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.54297 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	17.98748 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	3.72428 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	9.27108 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.77259 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	5.3883 (mg/s)
	mass flux in river at SW-002	M_r2 =	7.7840 (mg/s)
	mass flux in river at SW-003	M_r3 =	8.6366 (mg/s)
	mass flux in river at SW-004	M_r4 =	11.7312 (mg/s)
	mass flux in river at SW-004A	M_r4A =	23.2713 (mg/s)
	mass flux in river at SW-005	M_r5 =	41.2568 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	44.9831 (mg/s)
	mass flux into Colby Lake	M_cl =	55.0268 (mg/s)
	Low Flow		
	concentration in river at SW-001	C_r1 =	0.16136 (mg/L)
	concentration in river at SW-002	C_r2 =	0.18555 (mg/L)
	concentration in river at SW-003	C_r3 =	0.19194 (mg/L)
	concentration in river at SW-004	C_r4 =	0.20739 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.23924 (mg/L)
	concentration in river at SW-005	C_r5 =	0.25546 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.25732 (mg/L)
	concentration in Colby Lake	C_cl =	0.09650 (mg/L)

Partridge River Mass-Balance Model -Mine Site - Proposed Action

Case		Year 15	
Parameter		Iron	
Input concentration data	concentration of surface water into SW-001	C_s1 =	1.6000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	1.6000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	1.6000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	1.6000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	1.6000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	1.6000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	1.6000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	1.6000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	1.6000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0300 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	2.8440 (mg/L)
	concentration of ground water into SW-002	C_g2 =	2.8440 (mg/L)
	concentration of ground water into SW-003	C_g3 =	2.8440 (mg/L)
	concentration of ground water into SW-004	C_g4 =	2.8440 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	2.8440 (mg/L)
	concentration of ground water into SW-005	C_g5 =	2.8440 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	2.8440 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	2.8440 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.8100 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	219.4090 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	235.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	235.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	235.0000 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.2255 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.1500 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.8100 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	219.4090 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	235.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	235.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	235.0000 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.2255 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	2.8440 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	2.8440 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	2.8440 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	106.0000 (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	14.48734 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.84900 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	24.33292 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	8.64997 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.17410 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.03388 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00012 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	25.23466 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.03388 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.02109 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.03092 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.48801 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00023 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00011 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00021 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.12067 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00108 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00232 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.02274 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	111.58972 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.14097 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00002 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.19392 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	182.70140 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	37.82804 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	94.16768 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	17.65920 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	15.3363 (mg/s)
	mass flux in river at SW-002	M_r2 =	39.6693 (mg/s)
	mass flux in river at SW-003	M_r3 =	48.5273 (mg/s)
	mass flux in river at SW-004	M_r4 =	74.4634 (mg/s)
	mass flux in river at SW-004A	M_r4A =	186.4080 (mg/s)
	mass flux in river at SW-005	M_r5 =	369.1094 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	406.9375 (mg/s)
	mass flux into Colby Lake	M_cl =	518.7643 (mg/s)
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C_r1 =	0.45925 (mg/L)
	concentration in river at SW-002	C_r2 =	0.94563 (mg/L)
	concentration in river at SW-003	C_r3 =	1.07857 (mg/L)
	concentration in river at SW-004	C_r4 =	1.31675 (mg/L)
	concentration in river at SW-004A	C_r4A =	1.91640 (mg/L)
	concentration in river at SW-005	C_r5 =	2.28535 (mg/L)
	concentration in river at USGS Gage	C_r6 =	2.32786 (mg/L)
	concentration in Colby Lake	C_cl =	1.71203 (mg/L)

Partridge River Mass-Balance Model -Mine Site - Proposed Action

Case	Year 15		
Parameter	Hardness		
Input concentration data	concentration of surface water into SW-001	C_s1 =	110.0000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	110.0000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	110.0000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	110.0000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	110.0000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	110.0000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	110.0000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	110.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	110.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	110.0000 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	66.4200 (mg/L)
	concentration of ground water into SW-002	C_g2 =	66.4200 (mg/L)
	concentration of ground water into SW-003	C_g3 =	66.4200 (mg/L)
	concentration of ground water into SW-004	C_g4 =	66.4200 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	66.4200 (mg/L)
	concentration of ground water into SW-005	C_g5 =	66.4200 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	66.4200 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	66.4200 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	1,729.3495 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	5,435.6906 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	5,435.6906 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	5,435.6906 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	3,900.7016 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	43.5200 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	71.5000 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	1,729.3495 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	5,435.6906 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_g3LOs =	5,435.6906 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	5,435.6906 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	3,900.7016 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	43.5200 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	66.4200 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	66.4200 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	66.4200 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	4,083.0000 (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	338.34348 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	3,113.00000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	568.28140 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	202.01510 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	4.31331 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00	0.78377 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003	0.00286 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	589.34119 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00	0.78377 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.48792 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.51320 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	94.18314 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0	0.00534 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00248 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00356 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	23.28806 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.02527 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.05414 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00002 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.87609 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	2,606.11445 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	300.97424 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.03789 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	92.43429 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	4,266.88722 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
mass flux of ground water into USGS Gage	M_g6 =	883.45242 (mg/s)	
mass flux of surface water into Colby Lake	M_scl =	- (mg/s)	
mass flux of ground water into Colby Lake	M_gcl =	2,199.23262 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M_shl =	1,214.07000 (mg/s)	
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	3,451.3435 (mg/s)
	mass flux in river at SW-002	M_r2 =	4,019.6249 (mg/s)
	mass flux in river at SW-003	M_r3 =	4,226.7399 (mg/s)
	mass flux in river at SW-004	M_r4 =	4,936.3069 (mg/s)
	mass flux in river at SW-004A	M_r4A =	7,935.8678 (mg/s)
	mass flux in river at SW-005	M_r5 =	12,202.7551 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	13,086.2075 (mg/s)
	mass flux into Colby Lake	M_cl =	16,499.5101 (mg/s)
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C_r1 =	103.35220 (mg/L)
	concentration in river at SW-002	C_r2 =	95.81970 (mg/L)
	concentration in river at SW-003	C_r3 =	93.94364 (mg/L)
	concentration in river at SW-004	C_r4 =	87.26591 (mg/L)
	concentration in river at SW-004A	C_r4A =	81.58597 (mg/L)
	concentration in river at SW-005	C_r5 =	75.55370 (mg/L)
	concentration in river at USGS Gage	C_r6 =	74.85874 (mg/L)
	concentration in Colby Lake	C_cl =	104.93971 (mg/L)

Partridge River Mass-Balance Model -Mine Site - Proposed Action

Case		Year 15	
Parameter		Potassium	
Input concentration data	concentration of surface water into SW-001	C_s1 =	1.3000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	1.3000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	1.3000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	1.3000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	1.3000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	1.3000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	1.3000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	1.3000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	1.3000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	2.7000 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	1.7500 (mg/L)
	concentration of ground water into SW-002	C_g2 =	1.7500 (mg/L)
	concentration of ground water into SW-003	C_g3 =	1.7500 (mg/L)
	concentration of ground water into SW-004	C_g4 =	1.7500 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	1.7500 (mg/L)
	concentration of ground water into SW-005	C_g5 =	1.7500 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	1.7500 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	1.7500 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	49.0000 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	38.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	38.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	38.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	38.0000 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	2.2600 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	4.4500 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	49.0000 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	38.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	38.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	38.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	38.0000 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	2.2600 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	1.7500 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	1.7500 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	1.7500 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	56.7000 (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	8.91450 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	76.41000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	14.97279 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	5.32259 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.03015 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00548 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00002 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	15.52766 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00548 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00341 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00500 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	4.89094 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00004 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00002 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00003 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	1.20935 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00067 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00143 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.01217 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	68.66456 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	8.52791 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00107 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	5.75290 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	112.42175 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	23.27675 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	57.94425 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	14.34810 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	85.3245 (mg/s)
	mass flux in river at SW-002	M_r2 =	100.2973 (mg/s)
	mass flux in river at SW-003	M_r3 =	105.6555 (mg/s)
	mass flux in river at SW-004	M_r4 =	127.3117 (mg/s)
	mass flux in river at SW-004A	M_r4A =	210.2582 (mg/s)
	mass flux in river at SW-005	M_r5 =	322.6799 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	345.9567 (mg/s)
	mass flux into Colby Lake	M_cl =	418.2490 (mg/s)
	Low Flow		
	concentration in river at SW-001	C_r1 =	2.55508 (mg/L)
	concentration in river at SW-002	C_r2 =	2.39088 (mg/L)
	concentration in river at SW-003	C_r3 =	2.34830 (mg/L)
	concentration in river at SW-004	C_r4 =	2.25067 (mg/L)
	concentration in river at SW-004A	C_r4A =	2.16159 (mg/L)
	concentration in river at SW-005	C_r5 =	1.99788 (mg/L)
	concentration in river at USGS Gage	C_r6 =	1.97902 (mg/L)
	concentration in Colby Lake	C_cl =	1.38947 (mg/L)



Partridge River Mass-Balance Model -Mine Site - Proposed Action

Case		Year 15	
Parameter		Magnesium	
Input concentration data	concentration of surface water into SW-001	C_s1 =	8.0000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	8.0000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	8.0000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	8.0000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	8.0000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	8.0000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	8.0000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	8.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	8.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	10.5000 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	8.0200 (mg/L)
	concentration of ground water into SW-002	C_g2 =	8.0200 (mg/L)
	concentration of ground water into SW-003	C_g3 =	8.0200 (mg/L)
	concentration of ground water into SW-004	C_g4 =	8.0200 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	8.0200 (mg/L)
	concentration of ground water into SW-005	C_g5 =	8.0200 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	8.0200 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	8.0200 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	93.0000 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	1,030.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	1,030.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	1,030.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	656.9977 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	4.8800 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	9.0100 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	93.0000 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	1,030.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	1,030.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	1,030.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	656.9977 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	4.8800 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	8.0200 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	8.0200 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	8.0200 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	615.0000 (mg/L)
Low Flow			
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	40.85388 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	297.15000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	68.61814 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	24.39267 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.81732 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.14851 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00054 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	71.16104 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.14851 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.09245 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.08644 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	10.56098 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00101 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00047 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00060 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	2.61135 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00305 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00654 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.13196 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	314.67988 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	16.18563 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00204 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	11.64801 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	515.21282 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	106.67402 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	265.55022 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	88.29600 (mg/s)
Low Flow			
Mass balance at each node	mass flux in river at SW-001	M_r1 =	338.0039 (mg/s)
	mass flux in river at SW-002	M_r2 =	406.6220 (mg/s)
	mass flux in river at SW-003	M_r3 =	431.9811 (mg/s)
	mass flux in river at SW-004	M_r4 =	516.7860 (mg/s)
	mass flux in river at SW-004A	M_r4A =	859.3016 (mg/s)
	mass flux in river at SW-005	M_r5 =	1,374.5144 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	1,481.1884 (mg/s)
	mass flux into Colby Lake	M_cl =	1,835.0346 (mg/s)
Low Flow			
Convert mass flux to concentration	concentration in river at SW-001	C_r1 =	10.12169 (mg/L)
	concentration in river at SW-002	C_r2 =	9.69304 (mg/L)
	concentration in river at SW-003	C_r3 =	9.60122 (mg/L)
	concentration in river at SW-004	C_r4 =	9.13594 (mg/L)
	concentration in river at SW-004A	C_r4A =	8.83419 (mg/L)
	concentration in river at SW-005	C_r5 =	8.51034 (mg/L)
	concentration in river at USGS Gage	C_r6 =	8.47304 (mg/L)
	concentration in Colby Lake	C_cl =	8.05568 (mg/L)

**Partridge River Mass-Balance Model -Mine Site - Proposed Action**

Case		Year 15	
Parameter		Manganese	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.1500 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.1500 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.1500 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.1500 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.1500 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.1500 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.1500 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.1500 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.1500 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0086 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.1240 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.1240 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.1240 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.1240 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.1240 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.1240 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.1240 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.1240 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.7500 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	47.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	47.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	47.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	46.1159 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.1604 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.1160 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.7500 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	47.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	47.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	47.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	46.1159 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.1604 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.1240 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.1240 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.1240 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	29.5000 (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.63166 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.24338 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	1.06093 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.37714 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.03730 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00678 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00002 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	1.10025 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00678 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00422 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00607 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.34711 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00005 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00002 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00004 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.08583 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00005 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00010 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00633 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	4.86537 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.13053 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00002 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.14996 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	7.96588 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	1.64932 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	4.10576 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	1.65555 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	0.8750 (mg/s)
	mass flux in river at SW-002	M_r2 =	1.9360 (mg/s)
	mass flux in river at SW-003	M_r3 =	2.3572 (mg/s)
	mass flux in river at SW-004	M_r4 =	3.9141 (mg/s)
	mass flux in river at SW-004A	M_r4A =	9.0599 (mg/s)
	mass flux in river at SW-005	M_r5 =	17.0258 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	18.6752 (mg/s)
	mass flux into Colby Lake	M_cl =	24.4365 (mg/s)
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C_r1 =	0.02620 (mg/L)
	concentration in river at SW-002	C_r2 =	0.04615 (mg/L)
	concentration in river at SW-003	C_r3 =	0.05239 (mg/L)
	concentration in river at SW-004	C_r4 =	0.06919 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.09314 (mg/L)
	concentration in river at SW-005	C_r5 =	0.10542 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.10683 (mg/L)
	concentration in Colby Lake	C_cl =	0.14439 (mg/L)

Partridge River Mass-Balance Model -Mine Site - Proposed Action

Case	Year 15		
Parameter	Sodium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	2.5000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	2.5000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	2.5000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	2.5000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	2.5000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	2.5000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	2.5000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	2.5000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	2.5000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	4.8000 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	13.3300 (mg/L)
	concentration of ground water into SW-002	C_g2 =	13.3300 (mg/L)
	concentration of ground water into SW-003	C_g3 =	13.3300 (mg/L)
	concentration of ground water into SW-004	C_g4 =	13.3300 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	13.3300 (mg/L)
	concentration of ground water into SW-005	C_g5 =	13.3300 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	13.3300 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	13.3300 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	681.0000 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	338.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	338.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	338.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	248.2544 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	4.6000 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	7.1900 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	681.0000 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	338.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	338.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	338.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	248.2544 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	4.6000 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	13.3300 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	13.3300 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	13.3300 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	524.0000 (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	67.90302 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	135.84000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	114.04985 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	40.54293 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.26821 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.04874 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00018 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	118.27639 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.04874 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.03034 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.03266 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	9.95502 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00033 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00015 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00023 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	2.46151 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00507 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.01087 (mg/s)
mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)	
mass flux of liner leakage from WWTF pond	M_gWTFp =	0.11243 (mg/s)	
mass flux of surface water into SW-004A	M_s4A =	- (mg/s)	
mass flux of ground water into SW-004A	M_g4A =	523.02779 (mg/s)	
mass flux of West Pit overflow	M_sms =	#N/A (mg/s)	
mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	118.52056 (mg/s)	
mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.01492 (mg/s)	
mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	9.29514 (mg/s)	
mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)	
mass flux of surface water into SW-005	M_s5 =	- (mg/s)	
mass flux of ground water into SW-005	M_g5 =	856.33253 (mg/s)	
mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)	
mass flux of ground water into USGS Gage	M_g6 =	177.30233 (mg/s)	
mass flux of surface water into Colby Lake	M_scl =	- (mg/s)	
mass flux of ground water into Colby Lake	M_gcl =	441.36963 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M_shl =	27.59250 (mg/s)	
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	203.7430 (mg/s)
	mass flux in river at SW-002	M_r2 =	317.7929 (mg/s)
	mass flux in river at SW-003	M_r3 =	358.6529 (mg/s)
	mass flux in river at SW-004	M_r4 =	489.5869 (mg/s)
	mass flux in river at SW-004A	M_r4A =	1,140.4453 (mg/s)
	mass flux in river at SW-005	M_r5 =	1,996.7778 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	2,174.0801 (mg/s)
mass flux into Colby Lake	M_cl =	2,643.0422 (mg/s)	
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C_r1 =	6.10119 (mg/L)
	concentration in river at SW-002	C_r2 =	7.57554 (mg/L)
	concentration in river at SW-003	C_r3 =	7.97143 (mg/L)
	concentration in river at SW-004	C_r4 =	8.65510 (mg/L)
	concentration in river at SW-004A	C_r4A =	11.72453 (mg/L)
	concentration in river at SW-005	C_r5 =	12.36311 (mg/L)
	concentration in river at USGS Gage	C_r6 =	12.43667 (mg/L)
	concentration in Colby Lake	C_cl =	3.89706 (mg/L)

Partridge River Mass-Balance Model -Mine Site - Proposed Action

Case	Year 15			
Parameter	Nickel			
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0016	(mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0016	(mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0016	(mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0016	(mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0016	(mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0016	(mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0016	(mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0016	(mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0033	(mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0016	(mg/L)
	concentration of West Pit overflow	C_sms =	#N/A	(mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0163	(mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0163	(mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0163	(mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0163	(mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0163	(mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0163	(mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0163	(mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0163	(mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A	(mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A	(mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.3824	(mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	762.0000	(mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	762.0000	(mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	618.6596	(mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	249.2417	(mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0080	(mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0190	(mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.3824	(mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	762.0000	(mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	762.0000	(mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	618.6596	(mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	249.2417	(mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0080	(mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A	(mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0163	(mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0163	(mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0163	(mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	254.0000	(mg/L)
Convert concentration to mass flux	Low Flow			
	mass flux of surface water into SW-001	M_s1 =	-	(mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.08293	(mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.04387	(mg/s)
	mass flux of surface water into SW-002	M_s2 =	-	(mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.13929	(mg/s)
	mass flux of surface water into SW-003	M_s3 =	-	(mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.04952	(mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A	(mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.60466	(mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00	0.10987	(mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003	0.00040	(mg/s)
	mass flux of surface water into SW-004	M_s4 =	-	(mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.14445	(mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A	(mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A	(mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	-	(mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00	0.10987	(mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.05553	(mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.03279	(mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.01725	(mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0	0.00075	(mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00028	(mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00023	(mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00426	(mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00001	(mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00001	(mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000	(mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.05450	(mg/s)
	mass flux of surface water into SW-004A	M_s4A =	-	(mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.63878	(mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A	(mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.06655	(mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00001	(mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.02456	(mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A	(mg/s)
	mass flux of surface water into SW-005	M_s5 =	-	(mg/s)
	mass flux of ground water into SW-005	M_g5 =	1.04584	(mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	-	(mg/s)
mass flux of ground water into USGS Gage	M_g6 =	0.21654	(mg/s)	
mass flux of surface water into Colby Lake	M_scl =	-	(mg/s)	
mass flux of ground water into Colby Lake	M_gcl =	0.53905	(mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.03642	(mg/s)	
Mass balance at each node	Low Flow			
	mass flux in river at SW-001	M_r1 =	0.1268	(mg/s)
	mass flux in river at SW-002	M_r2 =	0.2661	(mg/s)
	mass flux in river at SW-003	M_r3 =	1.0305	(mg/s)
	mass flux in river at SW-004	M_r4 =	1.4509	(mg/s)
	mass flux in river at SW-004A	M_r4A =	2.1808	(mg/s)
	mass flux in river at SW-005	M_r5 =	3.2266	(mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	3.4431	(mg/s)
	mass flux into Colby Lake	M_cl =	4.0186	(mg/s)
Convert mass flux to concentration	Low Flow			
	concentration in river at SW-001	C_r1 =	0.00380	(mg/L)
	concentration in river at SW-002	C_r2 =	0.00634	(mg/L)
	concentration in river at SW-003	C_r3 =	0.02290	(mg/L)
	concentration in river at SW-004	C_r4 =	0.02565	(mg/L)
	concentration in river at SW-004A	C_r4A =	0.02242	(mg/L)
	concentration in river at SW-005	C_r5 =	0.01998	(mg/L)
	concentration in river at USGS Gage	C_r6 =	0.01970	(mg/L)
concentration in Colby Lake	C_cl =	0.00401	(mg/L)	

**Partridge River Mass-Balance Model -Mine Site - Proposed Action**

Case Parameter	Year 15 Lead			
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0005	(mg/L)
	concentration of surface water into SW-002	C s2 =	0.0005	(mg/L)
	concentration of surface water into SW-003	C s3 =	0.0005	(mg/L)
	concentration of surface water into SW-004	C s4 =	0.0005	(mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0005	(mg/L)
	concentration of surface water into SW-005	C s5 =	0.0005	(mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0005	(mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0005	(mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0005	(mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0002	(mg/L)
	concentration of West Pit overflow	C sms =	#N/A	(mg/L)
	concentration of ground water into SW-001	C g1 =	0.0011	(mg/L)
	concentration of ground water into SW-002	C g2 =	0.0011	(mg/L)
	concentration of ground water into SW-003	C g3 =	0.0011	(mg/L)
	concentration of ground water into SW-004	C g4 =	0.0011	(mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0011	(mg/L)
	concentration of ground water into SW-005	C g5 =	0.0011	(mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0011	(mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0011	(mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A	(mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A	(mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	0.0457	(mg/L)
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	0.0528	(mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0528	(mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0528	(mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.0528	(mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0007	(mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	-	(mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	0.0457	(mg/L)
	concentration of liner leakage from Cat 3 sumps	C gC3s =	0.0528	(mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.0528	(mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0528	(mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0528	(mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0007	(mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A	(mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0011	(mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0011	(mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0011	(mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0600	(mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	-	(mg/s)
	mass flux of ground water into SW-001	M g1 =	0.00571	(mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.00425	(mg/s)
	mass flux of surface water into SW-002	M s2 =	-	(mg/s)
	mass flux of ground water into SW-002	M g2 =	0.00958	(mg/s)
	mass flux of surface water into SW-003	M s3 =	-	(mg/s)
	mass flux of ground water into SW-003	M g3 =	0.00341	(mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A	(mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M gC3_003 =	0.00004	(mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_00 =	0.00001	(mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M gC3s_003 =	0.00000	(mg/s)
	mass flux of surface water into SW-004	M s4 =	-	(mg/s)
	mass flux of ground water into SW-004	M g4 =	0.00994	(mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A	(mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A	(mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M gC3_004 =	-	(mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_00 =	0.00001	(mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00000	(mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00001	(mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.00146	(mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_0 =	0.00000	(mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000	(mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000	(mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.00036	(mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00000	(mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00000	(mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000	(mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00001	(mg/s)
	mass flux of surface water into SW-004A	M s4A =	-	(mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.04395	(mg/s)
	mass flux of West Pit overflow	M sms =	#N/A	(mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M gC12 =	0.00795	(mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M gC12s =	0.00000	(mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M gO12 =	-	(mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A	(mg/s)
	mass flux of surface water into SW-005	M s5 =	-	(mg/s)
	mass flux of ground water into SW-005	M g5 =	0.07195	(mg/s)
	mass flux of surface water into USGS Gage	M s6 =	-	(mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.01490	(mg/s)
	mass flux of surface water into Colby Lake	M scl =	-	(mg/s)
	mass flux of ground water into Colby Lake	M gcl =	0.03708	(mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.00552	(mg/s)
Mass balance at each node	mass flux in river at SW-001	M r1 =	0.0100	(mg/s)
	mass flux in river at SW-002	M r2 =	0.0195	(mg/s)
	mass flux in river at SW-003	M r3 =	0.0230	(mg/s)
	mass flux in river at SW-004	M r4 =	0.0348	(mg/s)
	mass flux in river at SW-004A	M r4A =	0.0867	(mg/s)
	mass flux in river at SW-005	M r5 =	0.1586	(mg/s)
	mass flux in river at USGS Gage	M r6 =	0.1735	(mg/s)
mass flux into Colby Lake	M cl =	0.2161	(mg/s)	
Convert mass flux to concentration	concentration in river at SW-001	C r1 =	0.00030	(mg/L)
	concentration in river at SW-002	C r2 =	0.00047	(mg/L)
	concentration in river at SW-003	C r3 =	0.00051	(mg/L)
	concentration in river at SW-004	C r4 =	0.00061	(mg/L)
	concentration in river at SW-004A	C r4A =	0.00089	(mg/L)
	concentration in river at SW-005	C r5 =	0.00098	(mg/L)
	concentration in river at USGS Gage	C r6 =	0.00099	(mg/L)
	concentration in Colby Lake	C cl =	0.00057	(mg/L)

**Partridge River Mass-Balance Model -Mine Site - Proposed Action**

Case		Year 15	
Parameter		Antimony	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0015 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0015 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0015 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0015 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0015 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0015 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0015 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0015 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0015 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0015 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0015 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0015 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0015 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0015 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0015 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0015 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0015 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0015 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0800 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.0800 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0800 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0800 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0800 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0003 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0004 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0800 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.0800 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0800 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0800 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0800 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0003 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0015 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0015 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0015 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.1238 (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00764 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.04245 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.01283 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00456 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00006 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.01331 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00001 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00065 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00016 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00003 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.05886 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.01392 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.00052 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.09636 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.01995 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.04967 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.01656 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	0.0501 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.0629 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.0676 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.0817 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.1550 (mg/s)
	mass flux in river at SW-005	M_r5 =	0.2514 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	0.2713 (mg/s)
	mass flux into Colby Lake	M_cl =	0.3376 (mg/s)
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C_r1 =	0.00150 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00150 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00150 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00145 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00159 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00156 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00155 (mg/L)
	concentration in Colby Lake	C_cl =	0.00151 (mg/L)



**Partridge River Mass-Balance Model -Mine Site - Proposed Action**

Case		Year 15	
Parameter		Selenium	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0005 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0005 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0005 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0005 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0005 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0005 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0005 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0005 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0005 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0005 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0019 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0019 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0019 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0019 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0019 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0019 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0019 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0019 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0029 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.0029 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0029 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0029 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0029 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0004 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0019 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0029 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.0029 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0029 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0029 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0029 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0004 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0019 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0019 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0019 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0090 (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00973 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.01415 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.01634 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00581 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.01695 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00096 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00024 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00000 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.07494 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.00050 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.00246 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.12270 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.02540 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.06324 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00552 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	0.0239 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.0402 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.0460 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.0642 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.1421 (mg/s)
	mass flux in river at SW-005	M_r5 =	0.2648 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	0.2902 (mg/s)
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C_r1 =	0.00072 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00096 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00102 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00113 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00146 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00164 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00166 (mg/L)
	concentration in Colby Lake	C_cl =	0.00067 (mg/L)

Partridge River Mass-Balance Model -Mine Site - Proposed Action

Case Parameter	Year 15 sulfate		
Input concentration data	concentration of surface water into SW-001	C s1 =	9.0000 (mg/L)
	concentration of surface water into SW-002	C s2 =	9.0000 (mg/L)
	concentration of surface water into SW-003	C s3 =	9.0000 (mg/L)
	concentration of surface water into SW-004	C s4 =	9.0000 (mg/L)
	concentration of surface water into SW-004A	C s4A =	9.0000 (mg/L)
	concentration of surface water into SW-005	C s5 =	9.0000 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	9.0000 (mg/L)
	concentration of surface water into Colby Lake	C scl =	9.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	22.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	22.0000 (mg/L)
	concentration of West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	16.1300 (mg/L)
	concentration of ground water into SW-002	C g2 =	16.1300 (mg/L)
	concentration of ground water into SW-003	C g3 =	16.1300 (mg/L)
	concentration of ground water into SW-004	C g4 =	16.1300 (mg/L)
	concentration of ground water into SW-004A	C g4A =	16.1300 (mg/L)
	concentration of ground water into SW-005	C g5 =	16.1300 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	16.1300 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	16.1300 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	2,128.7143 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	9,600.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	9,600.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	9,600.0000 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	9,600.0000 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	35.1700 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	68.3000 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	2,128.7143 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C gC3s =	9,600.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	9,600.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	9,600.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	9,600.0000 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	35.1700 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	16.1300 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	16.1300 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	16.1300 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	7,276.0000 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	(mg/s)
	mass flux of ground water into SW-001	M g1 =	82.16622 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	622.60000 (mg/s)
	mass flux of surface water into SW-002	M s2 =	(mg/s)
	mass flux of ground water into SW-002	M g2 =	138.00631 (mg/s)
	mass flux of surface water into SW-003	M s3 =	(mg/s)
	mass flux of ground water into SW-003	M g3 =	49.05907 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep 003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M gC3_003 =	7.61775 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_00 =	1.38422 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M gC3s_003 =	0.00505 (mg/s)
	mass flux of surface water into SW-004	M s4 =	(mg/s)
	mass flux of ground water into SW-004	M g4 =	143.12065 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep 004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_00 =	1.38422 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.86171 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	1.26303 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	76.11262 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_0 =	0.00942 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00438 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00875 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	18.81988 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00614 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.01315 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	1.56122 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M g4A =	632.89109 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M gC12 =	370.47930 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M gC12s =	0.04665 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M gO12 =	88.29738 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	- (mg/s)
	mass flux of ground water into SW-005	M g5 =	1,036.20733 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	214.54513 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	- (mg/s)
mass flux of ground water into Colby Lake	M gcl =	534.08043 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	99.33300 (mg/s)	
Mass balance at each node			Low Flow
	mass flux in river at SW-001	M r1 =	704.7662 (mg/s)
	mass flux in river at SW-002	M r2 =	842.7725 (mg/s)
	mass flux in river at SW-003	M r3 =	900.8366 (mg/s)
	mass flux in river at SW-004	M r4 =	1,144.0088 (mg/s)
	mass flux in river at SW-004A	M r4A =	2,235.7232 (mg/s)
	mass flux in river at SW-005	M r5 =	3,271.9306 (mg/s)
	mass flux in river at USGS Gage	M r6 =	3,486.4757 (mg/s)
mass flux into Colby Lake	M cl =	4,119.8891 (mg/s)	
Convert mass flux to concentration			Low Flow
	concentration in river at SW-001	C r1 =	21.10458 (mg/L)
	concentration in river at SW-002	C r2 =	20.08999 (mg/L)
	concentration in river at SW-003	C r3 =	20.02206 (mg/L)
	concentration in river at SW-004	C r4 =	20.22422 (mg/L)
	concentration in river at SW-004A	C r4A =	22.98471 (mg/L)
	concentration in river at SW-005	C r5 =	20.25825 (mg/L)
	concentration in river at USGS Gage	C r6 =	19.94414 (mg/L)
concentration in Colby Lake	C cl =	10.44046 (mg/L)	

Partridge River Mass-Balance Model -Mine Site - Proposed Action

Case	Year 15		
Parameter	Thallium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0004 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0004 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0004 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0004 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0004 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0004 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0004 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0004 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0004 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0003 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0000 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0000 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0000 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0000 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0000 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0000 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0000 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0000 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0000 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.0001 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0001 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0001 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0001 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0000 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0000 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.0001 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_g3LOs =	0.0001 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0001 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0001 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0000 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0000 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0000 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0000 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	0.0041 (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M_s1 =	(mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00002 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.00809 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	(mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.00003 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	(mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00001 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	(mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.00004 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00009 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)	
mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00002 (mg/s)	
mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)	
mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)	
mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)	
mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00000 (mg/s)	
mass flux of surface water into SW-004A	M_s4A =	- (mg/s)	
mass flux of ground water into SW-004A	M_g4A =	0.00016 (mg/s)	
mass flux of West Pit overflow	M_sms =	#N/A (mg/s)	
mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.00000 (mg/s)	
mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)	
mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	- (mg/s)	
mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)	
mass flux of surface water into SW-005	M_s5 =	- (mg/s)	
mass flux of ground water into SW-005	M_g5 =	0.00026 (mg/s)	
mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)	
mass flux of ground water into USGS Gage	M_g6 =	0.00005 (mg/s)	
mass flux of surface water into Colby Lake	M_scl =	- (mg/s)	
mass flux of ground water into Colby Lake	M_gcl =	0.00013 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTF	M_shl =	0.00441 (mg/s)	
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	0.0081 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.0081 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.0082 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.0083 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.0085 (mg/s)
	mass flux in river at SW-005	M_r5 =	0.0087 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	0.0088 (mg/s)
mass flux into Colby Lake	M_cl =	0.0133 (mg/s)	
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C_r1 =	0.00024 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00019 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00018 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00015 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00009 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00005 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00005 (mg/L)
concentration in Colby Lake	C_cl =	0.00035 (mg/L)	

**Partridge River Mass-Balance Model -Mine Site - Proposed Action**

Case		Year 15	
Parameter		Vanadium	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0009 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0009 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0009 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0009 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0009 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0009 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0009 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0009 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0009 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0043 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0043 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0043 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0043 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0043 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0043 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0043 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0043 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0043 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	1.4099 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	4.3215 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	6.7914 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.1259 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0507 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0017 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0014 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	1.4099 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	4.3215 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	6.7914 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.1259 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0507 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0017 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0043 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0043 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0043 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	5.5797 (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.02190 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.12169 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.03679 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.01308 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00343 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00098 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.03815 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00098 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00001 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00374 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00093 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00120 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.16872 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.24538 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00003 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.00181 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.27624 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.05719 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.14238 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00993 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	0.1438 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.1804 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.1979 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.2429 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.6588 (mg/s)
	mass flux in river at SW-005	M_r5 =	0.9351 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	0.9923 (mg/s)
	mass flux into Colby Lake	M_cl =	1.1446 (mg/s)
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C_r1 =	0.00430 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00430 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00440 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00429 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00677 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00579 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00568 (mg/L)
	concentration in Colby Lake	C_cl =	0.00153 (mg/L)

Partridge River Mass-Balance Model -Mine Site - Proposed Action

Case		Year 15	
Parameter		Zinc	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0160 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0160 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0160 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0160 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0160 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0160 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0160 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0160 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0620 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0073 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0275 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0275 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0275 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0275 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0275 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0275 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0275 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0275 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0900 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	26.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	26.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	26.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	26.0000 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0046 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0030 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0900 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	26.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	26.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	26.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	26.0000 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0046 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0275 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0275 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0275 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	14.8000 (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.14009 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.20744 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.23529 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.08364 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.02063 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00375 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00001 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.24401 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00375 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00233 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00342 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00987 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00003 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00001 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00002 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00244 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00001 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00002 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00318 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	1.07901 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.01566 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.00388 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	1.76663 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.36578 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.91055 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.68429 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	0.3475 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.5828 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.6908 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.9599 (mg/s)
	mass flux in river at SW-004A	M_r4A =	2.0585 (mg/s)
	mass flux in river at SW-005	M_r5 =	3.8251 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	4.1909 (mg/s)
	mass flux into Colby Lake	M_cl =	5.7858 (mg/s)
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C_r1 =	0.01041 (mg/L)
	concentration in river at SW-002	C_r2 =	0.01389 (mg/L)
	concentration in river at SW-003	C_r3 =	0.01535 (mg/L)
	concentration in river at SW-004	C_r4 =	0.01697 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.02116 (mg/L)
	concentration in river at SW-005	C_r5 =	0.02368 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.02397 (mg/L)
	concentration in Colby Lake	C_cl =	0.01752 (mg/L)

## Partridge River Mass-Balance Model - Mine Site - Proposed Action

### FLOWS

Case Flow	Year 15 Average Flow Conditions (mean annual)			
Total flow in Partridge River	flow in river at SW-001	Q_r1_M =	5.70	(cfs)
	flow in river at SW-002	Q_r2_M =	11.27	(cfs)
	flow in river at SW-003	Q_r3_M =	12.92	(cfs)
	flow in river at SW-004	Q_r4_M =	19.03	(cfs)
	flow in river at SW-004A	Q_r4a_M =	43.64	(cfs)
	flow in river at SW-005	Q_r5_M =	82.03	(cfs)
	flow in river at USGS Gage	Q_r6_M =	86.38	(cfs)
	total flow into Colby Lake	Q_cl_M =	111.50	(cfs)
	flow check	Q_ck_M =	111.50	(cfs)
input flow data	surface water flow into SW-001	Q_s1_M =	4.52	(cfs)
	surface water flow into SW-002	Q_s2_M =	5.27	(cfs)
	surface water flow into SW-003	Q_s3_M =	1.54	(cfs)
	surface water flow into SW-004	Q_s4_M =	5.69	(cfs)
	surface water flow into SW-004A	Q_s4a_M =	23.16	(cfs)
	surface water flow into SW-005	Q_s5_M =	36.12	(cfs)
	surface water flow into USGS Gage	Q_s6_M =	3.88	(cfs)
	surface water flow into Colby Lake	Q_scl_M =	23.56	(cfs)
	surface water inflow from Hoyt Lakes WWTP	Q_shl_M =	0.39	(cfs)
	surface water inflow from discharges upstream of PM-1	Q_sns_M =	1.00	(cfs)
	West Pit overflow	Q_sms_M =	-	(cfs)
	ground water flow into SW-001	Q_g1_M =	0.18	(cfs)
	ground water flow into SW-002	Q_g2_M =	0.30	(cfs)
	ground water flow into SW-003	Q_g3_M =	0.11	(cfs)
	ground water flow into SW-004	Q_g4_M =	0.31	(cfs)
	ground water flow into SW-004A	Q_g4a_M =	1.39	(cfs)
	ground water flow into SW-005	Q_g5_M =	2.27	(cfs)
	ground water flow into USGS Gage	Q_g6_M =	0.47	(cfs)
	ground water flow into Colby Lake	Q_gcl_M =	1.17	(cfs)
	ground water seepage from East Pit to SW-003	Q_gep_003_M =	-	(cfs)
	ground water seepage from East Pit to SW-004	Q_gep_004_M =	-	(cfs)
	ground water seepage from West Pit	Q_gwp_M =	-	(cfs)
	ground water liner leakage from Cat 1/2 stockpile	Q_gC12_M =	0.0084	(cfs)
	ground water liner leakage from Cat 3 stockpile to SW-003	Q_gC3_003_M =	0.0000	(cfs)
	ground water liner leakage from Cat 3 stockpile to SW-004	Q_gC3_004_M =	-	(cfs)
	ground water liner leakage from Cat 3LO stockpile to SW-003	Q_gC3LO_003_M =	0.0000	(cfs)
	ground water liner leakage from Cat 3LO stockpile to SW-004	Q_gC3LO_004_M =	0.0000	(cfs)
	ground water liner leakage from Cat 4 stockpile	Q_gC4_M =	0.0000	(cfs)
	ground water liner leakage from LO SP	Q_gC4LO_M =	0.0000	(cfs)
	ground water seepage from Overburden Storage	Q_gOS_M =	0.0765	(cfs)
	ground water seepage from Overburden (Cat 1/2)	Q_gO12_M =	0.0628	(cfs)
	ground water liner leakage from Cat 1/2 sumps	Q_gC12s_M =	0.0000	(cfs)
	ground water liner leakage from Cat 3 sumps	Q_gC3s_M =	0.0000	(cfs)
	ground water liner leakage from Cat 3LO sumps	Q_gC3LOs_M =	0.0000	(cfs)
	ground water liner leakage from Cat 4 sumps	Q_gC4s_M =	0.0000	(cfs)
	ground water liner leakage from LO SP sumps	Q_gC4LOs_M =	0.0000	(cfs)
	ground water seepage from Overburden pond - PW1	Q_gOp1_M =	0.0189	(cfs)
	ground water seepage from Overburden pond - PW7	Q_gOp7_M =	-	(cfs)
	ground water leakage from Haul Road pond - PW2	Q_gHRp2_M =	0.0000	(cfs)
	ground water leakage from Haul Road pond - PW4	Q_gHRp4_M =	0.0000	(cfs)
	ground water leakage from RTH pond - PW3	Q_gRTHp_M =	0.0000	(cfs)
	ground water liner leakage from WWTF pond	Q_gWTFp_M =	0.000008	(cfs)



Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case	Year 15		
Parameter	Silver		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0001 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0001 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0001 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0001 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0001 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0001 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0001 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0001 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0001 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0001 (mg/L)
	concentration of West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0006 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0006 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0006 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0006 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0006 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0006 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0006 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0006 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	0.0007 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	0.0007 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0007 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0007 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.0007 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	- (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	0.0007 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C gC3s =	0.0007 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.0007 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0007 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0007 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	- (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0006 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0006 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0006 (mg/L)
	concentration of liner leakage from WWTF pond	C gWTFp =	0.0031 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	0.01279 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.00280 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.00340 (mg/s)
	mass flux of surface water into SW-002	M s2 =	0.01492 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.00471 (mg/s)
	mass flux of surface water into SW-003	M s3 =	0.00437 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.00167 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep 003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M gC3 003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO 003 =	0.00000 (mg/s)
	mass flux of liner leakage from cat 3 sumps to SW-003	M gC3s 003 =	0.00000 (mg/s)
mass flux of surface water into SW-004	M s4 =	0.01611 (mg/s)	
mass flux of ground water into SW-004	M g4 =	0.00488 (mg/s)	
mass flux of seepage from East Pit to SW-004	M gep 004 =	#N/A (mg/s)	
mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)	
mass flux of liner leakage from Cat 3 stockpile to SW-004	M gC3 004 =	- (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO 004 =	0.00000 (mg/s)	
mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00000 (mg/s)	
mass flux of liner leakage from LOSP	M gC4LO =	0.00000 (mg/s)	
mass flux of seepage from Overburden (Storage)	M gOS =	- (mg/s)	
mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs 004 =	0.00000 (mg/s)	
mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)	
mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)	
mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	- (mg/s)	
mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00000 (mg/s)	
mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00000 (mg/s)	
mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)	
mass flux of liner leakage from WWTF pond	M gWTFp =	0.00000 (mg/s)	
mass flux of surface water into SW-004A	M s4A =	0.06554 (mg/s)	
mass flux of ground water into SW-004A	M g4A =	0.02158 (mg/s)	
mass flux of West Pit overflow	M sms =	#N/A (mg/s)	
mass flux of liner leakage from Cat 1/2 stockpile	M gC12 =	0.00017 (mg/s)	
mass flux of liner leakage from Cat 1/2 sumps	M gC12s =	0.00000 (mg/s)	
mass flux of seepage from Overburden (Cat 1/2)	M gO12 =	- (mg/s)	
mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)	
mass flux of surface water into SW-005	M s5 =	0.10221 (mg/s)	
mass flux of ground water into SW-005	M g5 =	0.03533 (mg/s)	
mass flux of surface water into USGS Gage	M s6 =	0.01098 (mg/s)	
mass flux of ground water into USGS Gage	M g6 =	0.00732 (mg/s)	
mass flux of surface water into Colby Lake	M scl =	0.06667 (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	0.01821 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.00110 (mg/s)	
Mass balance at each node	Average Flow		
	mass flux in river at SW-001	M r1 =	0.0190 (mg/s)
	mass flux in river at SW-002	M r2 =	0.0386 (mg/s)
	mass flux in river at SW-003	M r3 =	0.0447 (mg/s)
	mass flux in river at SW-004	M r4 =	0.0656 (mg/s)
	mass flux in river at SW-004A	M r4A =	0.1529 (mg/s)
	mass flux in river at SW-005	M r5 =	0.2905 (mg/s)
mass flux in river at USGS Gage	M r6 =	0.3088 (mg/s)	
mass flux into Colby Lake	M cl =	0.3948 (mg/s)	
Convert mass flux to concentration	Average Flow		
	concentration in river at SW-001	C r1 =	0.00012 (mg/L)
	concentration in river at SW-002	C r2 =	0.00012 (mg/L)
	concentration in river at SW-003	C r3 =	0.00012 (mg/L)
	concentration in river at SW-004	C r4 =	0.00012 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00012 (mg/L)
	concentration in river at SW-005	C r5 =	0.00013 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00013 (mg/L)
	concentration in Colby Lake	C cl =	0.00013 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case		Year 15	
Parameter		Aluminum	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0700 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0700 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0700 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0700 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0700 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0700 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0700 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0700 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0700 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0173 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.1250 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.1250 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.1250 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.1250 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.1250 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.1250 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.1250 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.1250 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	1.6800 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	83.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	83.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	83.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	83.0000 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.4106 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.1400 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	1.6800 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	83.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	83.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	83.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	83.0000 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.4106 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.1250 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.1250 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.1250 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	53.9000 (mg/L)
		Average Flow	
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	8.95493 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.63675 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.48959 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	10.44258 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	1.06948 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	3.05726 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.38019 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.11384 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.02098 (mg/s)
	mass flux of liner leakage from cat 3 sumps to SW-003	M_gC3s_003 =	0.00004 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	11.27421 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	1.10912 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.02098 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.01199 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.01786 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.88859 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00008 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00004 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00008 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.21972 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00005 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00010 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.01157 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	45.87562 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	4.90461 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.40169 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00004 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.24865 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	71.54997 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	8.03013 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	7.68597 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	1.66263 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	46.67236 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	4.13888 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.77259 (mg/s)
		Average Flow	
Mass balance at each node	mass flux in river at SW-001	M_r1 =	10.0813 (mg/s)
	mass flux in river at SW-002	M_r2 =	21.5933 (mg/s)
	mass flux in river at SW-003	M_r3 =	25.1656 (mg/s)
	mass flux in river at SW-004	M_r4 =	38.7200 (mg/s)
	mass flux in river at SW-004A	M_r4A =	90.1506 (mg/s)
	mass flux in river at SW-005	M_r5 =	169.7307 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	179.0793 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	230.6632 (mg/s)
			Average Flow
	concentration in river at SW-001	C_r1 =	0.06249 (mg/L)
	concentration in river at SW-002	C_r2 =	0.06768 (mg/L)
	concentration in river at SW-003	C_r3 =	0.06880 (mg/L)
	concentration in river at SW-004	C_r4 =	0.07192 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.07299 (mg/L)
	concentration in river at SW-005	C_r5 =	0.07312 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.07326 (mg/L)
	concentration in Colby Lake	C_cl =	0.07310 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case		Year 15	
Parameter		Arsenic	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0021 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0021 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0021 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0021 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0021 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0021 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0021 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0021 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0021 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0065 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0022 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0022 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0022 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0022 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0022 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0022 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0022 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0022 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.7100 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.7100 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.7100 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.4053 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.1644 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0016 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0027 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.7100 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.7100 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.7100 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.4053 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.1644 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0016 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0022 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0022 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0022 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.7100 (mg/L)
		Average Flow	
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	0.26993 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.01100 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.18395 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	0.31477 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.01848 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.09215 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00657 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00097 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00018 (mg/s)
	mass flux of liner leakage from cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.33984 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.01917 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00018 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00006 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00004 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00338 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00083 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00015 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	1.38282 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.08475 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.16976 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00002 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.00480 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	2.15672 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.13876 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.23168 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.02873 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	1.40684 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.07152 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.02329 (mg/s)
		Average Flow	
Mass balance at each node	mass flux in river at SW-001	M_r1 =	0.4649 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.7981 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.8980 (mg/s)
	mass flux in river at SW-004	M_r4 =	1.2617 (mg/s)
	mass flux in river at SW-004A	M_r4A =	2.9038 (mg/s)
	mass flux in river at SW-005	M_r5 =	5.1993 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	5.4597 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	6.9613 (mg/s)
			Average Flow
	concentration in river at SW-001	C_r1 =	0.00288 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00250 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00246 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00234 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00235 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00224 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00223 (mg/L)
	concentration in Colby Lake	C_cl =	0.00221 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case	Year 15			
Parameter	Boron			
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0450 (mg/L)	
	concentration of surface water into SW-002	C s2 =	0.0450 (mg/L)	
	concentration of surface water into SW-003	C s3 =	0.0450 (mg/L)	
	concentration of surface water into SW-004	C s4 =	0.0450 (mg/L)	
	concentration of surface water into SW-004A	C s4A =	0.0450 (mg/L)	
	concentration of surface water into SW-005	C s5 =	0.0450 (mg/L)	
	concentration of surface water into USGS Gage	C s6 =	0.0450 (mg/L)	
	concentration of surface water into Colby Lake	C scl =	0.0450 (mg/L)	
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0450 (mg/L)	
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0960 (mg/L)	
	concentration of West Pit overflow	C sms =	#N/A (mg/L)	
	concentration of ground water into SW-001	C g1 =	0.0870 (mg/L)	
	concentration of ground water into SW-002	C g2 =	0.0870 (mg/L)	
	concentration of ground water into SW-003	C g3 =	0.0870 (mg/L)	
	concentration of ground water into SW-004	C g4 =	0.0870 (mg/L)	
	concentration of ground water into SW-004A	C g4A =	0.0870 (mg/L)	
	concentration of ground water into SW-005	C g5 =	0.0870 (mg/L)	
	concentration of ground water into USGS Gage	C g6 =	0.0870 (mg/L)	
	concentration of ground water into Colby Lake	C gcl =	0.0870 (mg/L)	
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)	
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)	
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	0.7600 (mg/L)	
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	0.7600 (mg/L)	
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.7600 (mg/L)	
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.7600 (mg/L)	
	concentration of liner leakage from LOSP	C gC4LO =	0.7600 (mg/L)	
	concentration of seepage from Overburden (Storage)	C gOS =	0.0622 (mg/L)	
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	0.0370 (mg/L)	
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	0.7600 (mg/L)	
	concentration of liner leakage from Cat 3 sumps	C gC3s =	0.7600 (mg/L)	
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.7600 (mg/L)	
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.7600 (mg/L)	
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.7600 (mg/L)	
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0622 (mg/L)	
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)	
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0870 (mg/L)	
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0870 (mg/L)	
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0870 (mg/L)	
	concentration of liner leakage from WWTF ponc	C_gWTFp =	1.0700 (mg/L)	
				Average Flow
	Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	5.75674 (mg/s)
mass flux of ground water into SW-001		M g1 =	0.44318 (mg/s)	
mass flux of surface discharges from upstream of PM-1		M sns =	2.71680 (mg/s)	
mass flux of surface water into SW-002		M s2 =	6.71309 (mg/s)	
mass flux of ground water into SW-002		M g2 =	0.74436 (mg/s)	
mass flux of surface water into SW-003		M s3 =	1.96538 (mg/s)	
mass flux of ground water into SW-003		M g3 =	0.26461 (mg/s)	
mass flux of seepage from East Pit to SW-003		M gep_003 =	#N/A (mg/s)	
mass flux of liner leakage from Cat 3 stockpile to SW-003		M gC3_003 =	0.00104 (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-003		M gC3LO_003 =	0.00019 (mg/s)	
mass flux of liner leakage from cat 3 sumps to SW-003		M gC3s_003 =	0.00000 (mg/s)	
mass flux of surface water into SW-004		M s4 =	7.24771 (mg/s)	
mass flux of ground water into SW-004		M g4 =	0.77195 (mg/s)	
mass flux of seepage from East Pit to SW-004		M gep_004 =	#N/A (mg/s)	
mass flux of seepage from West Pit		M gwp =	#N/A (mg/s)	
mass flux of liner leakage from Cat 3 stockpile to SW-004		M gC3_004 =	- (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-004		M gC3LO_004 =	0.00019 (mg/s)	
mass flux of liner leakage from Cat 4 stockpile		M gC4 =	0.00011 (mg/s)	
mass flux of liner leakage from LOSP		M gC4LO =	0.00016 (mg/s)	
mass flux of seepage from Overburden (Storage)		M gOS =	0.13461 (mg/s)	
mass flux of liner leakage from Cat 3LO sumps to SW-004		M gC3LOs_004 =	0.00000 (mg/s)	
mass flux of liner leakage from Cat 4 sumps		M gC4s =	0.00000 (mg/s)	
mass flux of liner leakage from LOSP sumps		M gC4LOs =	0.00000 (mg/s)	
mass flux of seepage from Overburden Ponds - PW1		M gOp1 =	0.03328 (mg/s)	
mass flux of leakage from Haul Road Pond - PW2		M gHRp2 =	0.00003 (mg/s)	
mass flux of leakage from Haul Road Pond - PW4		M gHRp4 =	0.00007 (mg/s)	
mass flux of leakage from RTH Pond - PW3		M gRTHp =	0.00000 (mg/s)	
mass flux of liner leakage from WWTF pond		M_gWTFp =	0.00023 (mg/s)	
mass flux of surface water into SW-004A		M s4A =	29.49147 (mg/s)	
mass flux of ground water into SW-004A		M g4A =	3.41361 (mg/s)	
mass flux of West Pit overflow		M sms =	#N/A (mg/s)	
mass flux of liner leakage from Cat 1/2 stockpile		M gC12 =	0.18172 (mg/s)	
mass flux of liner leakage from Cat 1/2 sumps		M gC12s =	0.00002 (mg/s)	
mass flux of seepage from Overburden (Cat 1/2)		M gO12 =	0.06572 (mg/s)	
mass flux of seepage from Overburden Pond - PW7		M gOp7 =	#N/A (mg/s)	
mass flux of surface water into SW-005		M s5 =	45.99641 (mg/s)	
mass flux of ground water into SW-005		M g5 =	5.58897 (mg/s)	
mass flux of surface water into USGS Gage		M s6 =	4.94098 (mg/s)	
mass flux of ground water into USGS Gage		M g6 =	1.15719 (mg/s)	
mass flux of surface water into Colby Lake		M scl =	30.00366 (mg/s)	
mass flux of ground water into Colby Lake		M gcl =	2.88066 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP		M shl =	0.49667 (mg/s)	
			Average Flow	
Mass balance at each node	mass flux in river at SW-001	M r1 =	8.9167 (mg/s)	
	mass flux in river at SW-002	M r2 =	16.3742 (mg/s)	
	mass flux in river at SW-003	M r3 =	18.6054 (mg/s)	
	mass flux in river at SW-004	M r4 =	26.7937 (mg/s)	
	mass flux in river at SW-004A	M r4A =	59.9463 (mg/s)	
	mass flux in river at SW-005	M r5 =	111.5317 (mg/s)	
	mass flux in river at USGS Gage	M r6 =	117.6298 (mg/s)	
mass flux into Colby Lake	M cl =	151.0108 (mg/s)		
			Average Flow	
Convert mass flux to concentration	concentration in river at SW-001	C r1 =	0.05527 (mg/L)	
	concentration in river at SW-002	C r2 =	0.05132 (mg/L)	
	concentration in river at SW-003	C r3 =	0.05087 (mg/L)	
	concentration in river at SW-004	C r4 =	0.04976 (mg/L)	
	concentration in river at SW-004A	C r4A =	0.04854 (mg/L)	
	concentration in river at SW-005	C r5 =	0.04804 (mg/L)	
	concentration in river at USGS Gage	C r6 =	0.04812 (mg/L)	
concentration in Colby Lake	C cl =	0.04786 (mg/L)		

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case	Year 15			
Parameter	Barium			
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0077 (mg/L)	
	concentration of surface water into SW-002	C_s2 =	0.0077 (mg/L)	
	concentration of surface water into SW-003	C_s3 =	0.0077 (mg/L)	
	concentration of surface water into SW-004	C_s4 =	0.0077 (mg/L)	
	concentration of surface water into SW-004A	C_s4A =	0.0077 (mg/L)	
	concentration of surface water into SW-005	C_s5 =	0.0077 (mg/L)	
	concentration of surface water into USGS Gage	C_s6 =	0.0077 (mg/L)	
	concentration of surface water into Colby Lake	C_scl =	0.0077 (mg/L)	
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0077 (mg/L)	
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0050 (mg/L)	
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)	
	concentration of ground water into SW-001	C_g1 =	0.0219 (mg/L)	
	concentration of ground water into SW-002	C_g2 =	0.0219 (mg/L)	
	concentration of ground water into SW-003	C_g3 =	0.0219 (mg/L)	
	concentration of ground water into SW-004	C_g4 =	0.0219 (mg/L)	
	concentration of ground water into SW-004A	C_g4A =	0.0219 (mg/L)	
	concentration of ground water into SW-005	C_g5 =	0.0219 (mg/L)	
	concentration of ground water into USGS Gage	C_g6 =	0.0219 (mg/L)	
	concentration of ground water into Colby Lake	C_gcl =	0.0219 (mg/L)	
	concentration of ground water seepage from East Pit	C_ggp =	#N/A (mg/L)	
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)	
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.1900 (mg/L)	
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.1900 (mg/L)	
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.1900 (mg/L)	
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.1900 (mg/L)	
	concentration of liner leakage from LOSP	C_gC4LO =	0.1900 (mg/L)	
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0168 (mg/L)	
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0140 (mg/L)	
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.1900 (mg/L)	
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.1900 (mg/L)	
	concentration of liner leakage from Cat 3LO sumps	C_g3LOs =	0.1900 (mg/L)	
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.1900 (mg/L)	
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.1900 (mg/L)	
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0168 (mg/L)	
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)	
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0219 (mg/L)	
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0219 (mg/L)	
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0219 (mg/L)	
	concentration of liner leakage from WWTF ponc	C_gWTFp =	0.3000 (mg/L)	
	Convert concentration to mass flux	Average Flow		
		mass flux of surface water into SW-001	M_s1 =	0.98248 (mg/s)
mass flux of ground water into SW-001		M_g1 =	0.11166 (mg/s)	
mass flux of surface discharges from upstream of PM-1		M_sns =	0.14150 (mg/s)	
mass flux of surface water into SW-002		M_s2 =	1.14570 (mg/s)	
mass flux of ground water into SW-002		M_g2 =	0.18754 (mg/s)	
mass flux of surface water into SW-003		M_s3 =	0.33543 (mg/s)	
mass flux of ground water into SW-003		M_g3 =	0.06667 (mg/s)	
mass flux of seepage from East Pit to SW-003		M_ggp_003 =	#N/A (mg/s)	
mass flux of liner leakage from Cat 3 stockpile to SW-003		M_gC3_003 =	0.00026 (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-003		M_gC3LO_00 =	0.00005 (mg/s)	
mass flux of liner leakage from cat 3 sumps to SW-003		M_gC3s_003 =	0.00000 (mg/s)	
mass flux of surface water into SW-004		M_s4 =	1.23694 (mg/s)	
mass flux of ground water into SW-004		M_g4 =	0.19450 (mg/s)	
mass flux of seepage from East Pit to SW-004		M_ggp_004 =	#N/A (mg/s)	
mass flux of seepage from West Pit		M_gwp =	#N/A (mg/s)	
mass flux of liner leakage from Cat 3 stockpile to SW-004		M_gC3_004 =	- (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-004		M_gC3LO_00 =	0.00005 (mg/s)	
mass flux of liner leakage from Cat 4 stockpile		M_gC4 =	0.00003 (mg/s)	
mass flux of liner leakage from LOSP		M_gC4LO =	0.00004 (mg/s)	
mass flux of seepage from Overburden (Storage)		M_gOS =	0.03643 (mg/s)	
mass flux of liner leakage from Cat 3LO sumps to SW-004		M_gC3LOs_0 =	0.00000 (mg/s)	
mass flux of liner leakage from Cat 4 sumps		M_gC4s =	0.00000 (mg/s)	
mass flux of liner leakage from LOSP sumps		M_gC4LOs =	0.00000 (mg/s)	
mass flux of seepage from Overburden Ponds - PW1		M_gOp1 =	0.00901 (mg/s)	
mass flux of leakage from Haul Road Pond - PW2		M_gHRp2 =	0.00001 (mg/s)	
mass flux of leakage from Haul Road Pond - PW4		M_gHRp4 =	0.00002 (mg/s)	
mass flux of leakage from RTH Pond - PW3		M_gRTHp =	0.00000 (mg/s)	
mass flux of liner leakage from WWTF pond		M_gWTFp =	0.00006 (mg/s)	
mass flux of surface water into SW-004A		M_s4A =	5.03321 (mg/s)	
mass flux of ground water into SW-004A		M_g4A =	0.86007 (mg/s)	
mass flux of West Pit overflow		M_sms =	#N/A (mg/s)	
mass flux of liner leakage from Cat 1/2 stockpile		M_gC12 =	0.04543 (mg/s)	
mass flux of liner leakage from Cat 1/2 sumps		M_gC12s =	0.00000 (mg/s)	
mass flux of seepage from Overburden (Cat 1/2)		M_gO12 =	0.02487 (mg/s)	
mass flux of seepage from Overburden Pond - PW7		M_gOp7 =	#N/A (mg/s)	
mass flux of surface water into SW-005		M_s5 =	7.85005 (mg/s)	
mass flux of ground water into SW-005		M_g5 =	1.40816 (mg/s)	
mass flux of surface water into USGS Gage		M_s6 =	0.84326 (mg/s)	
mass flux of ground water into USGS Gage		M_g6 =	0.29156 (mg/s)	
mass flux of surface water into Colby Lake		M_scl =	5.12062 (mg/s)	
mass flux of ground water into Colby Lake		M_gcl =	0.72579 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.08476 (mg/s)		
Mass balance at each node	Average Flow			
	mass flux in river at SW-001	M_r1 =	1.2358 (mg/s)	
	mass flux in river at SW-002	M_r2 =	2.5689 (mg/s)	
	mass flux in river at SW-003	M_r3 =	2.9713 (mg/s)	
	mass flux in river at SW-004	M_r4 =	4.4484 (mg/s)	
	mass flux in river at SW-004A	M_r4A =	10.4120 (mg/s)	
	mass flux in river at SW-005	M_r5 =	19.6702 (mg/s)	
mass flux in river at USGS Gage	M_r6 =	20.8050 (mg/s)		
mass flux into Colby Lake	M_cl =	26.7362 (mg/s)		
Convert mass flux to concentration	Average Flow			
	concentration in river at SW-001	C_r1 =	0.00766 (mg/L)	
	concentration in river at SW-002	C_r2 =	0.00805 (mg/L)	
	concentration in river at SW-003	C_r3 =	0.00812 (mg/L)	
	concentration in river at SW-004	C_r4 =	0.00826 (mg/L)	
	concentration in river at SW-004A	C_r4A =	0.00843 (mg/L)	
	concentration in river at SW-005	C_r5 =	0.00847 (mg/L)	
	concentration in river at USGS Gage	C_r6 =	0.00851 (mg/L)	
concentration in Colby Lake	C_cl =	0.00847 (mg/L)		

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case		Year 15	
Parameter		Beryllium	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0001 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0001 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0001 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0001 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0001 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0001 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0001 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0001 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0001 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0001 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0001 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0001 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0001 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0001 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0001 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0001 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0001 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0001 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.0023 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0023 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0023 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0023 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	- (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.0023 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0023 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0023 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0023 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	- (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0001 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0001 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0001 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0027 (mg/L)
		Average Flow	
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	0.01279 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00074 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.00283 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	0.01492 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.00124 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.00437 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00044 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00	0.00000 (mg/s)
	mass flux of liner leakage from cat 3 sumps to SW-003	M_gC3s_003	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.01611 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.00129 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	- (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00000 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	0.06554 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.00569 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.00005 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	0.10221 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.00931 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.01098 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.00193 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	0.06667 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.00480 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00110 (mg/s)
		Average Flow	
Mass balance at each node	mass flux in river at SW-001	M_r1 =	0.0164 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.0325 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.0373 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.0547 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.1260 (mg/s)
	mass flux in river at SW-005	M_r5 =	0.2375 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	0.2504 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	0.3230 (mg/s)
			Average Flow
	concentration in river at SW-001	C_r1 =	0.00010 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00010 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00010 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00010 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00010 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00010 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00010 (mg/L)
	concentration in Colby Lake	C_cl =	0.00010 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case	Year 15		
Parameter	Calcium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	17.0000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	17.0000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	17.0000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	17.0000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	17.0000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	17.0000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	17.0000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	17.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	17.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	24.5000 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	14.7900 (mg/L)
	concentration of ground water into SW-002	C_g2 =	14.7900 (mg/L)
	concentration of ground water into SW-003	C_g3 =	14.7900 (mg/L)
	concentration of ground water into SW-004	C_g4 =	14.7900 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	14.7900 (mg/L)
	concentration of ground water into SW-005	C_g5 =	14.7900 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	14.7900 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	14.7900 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	435.9790 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	480.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	480.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	480.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	334.5836 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	9.3700 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	15.8000 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	435.9790 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	480.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	480.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	480.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	334.5836 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	9.3700 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	14.7900 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	14.7900 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	14.7900 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	622.0000 (mg/L)

Convert concentration to mass flux	Average Flow		
	mass flux of surface water into SW-001	M_s1 =	2,174.76906 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	75.34026 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	693.35000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	2,536.05622 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	126.54143 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	742.47864 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	44.98349 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.65834 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.12131 (mg/s)
	mass flux of liner leakage from cat 3 sumps to SW-003	M_gC3s_003 =	0.00025 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	2,738.02247 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	131.23090 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.12131 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.06935 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.07198 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	20.27794 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00047 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00022 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00030 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	5.01400 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00563 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.01206 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.13346 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	11,141.22201 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	580.31365 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	104.24342 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00955 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	28.06213 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	17,376.42100 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	950.12439 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	1,866.59358 (mg/s)
mass flux of ground water into USGS Gage	M_g6 =	196.72179 (mg/s)	
mass flux of surface water into Colby Lake	M_scl =	11,334.71600 (mg/s)	
mass flux of ground water into Colby Lake	M_gcl =	489.71169 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M_shl =	187.62900 (mg/s)	

Mass balance at each node	Average Flow		
	mass flux in river at SW-001	M_r1 =	2,943.4593 (mg/s)
	mass flux in river at SW-002	M_r2 =	5,606.0570 (mg/s)
	mass flux in river at SW-003	M_r3 =	6,394.2990 (mg/s)
	mass flux in river at SW-004	M_r4 =	9,289.2591 (mg/s)
	mass flux in river at SW-004A	M_r4A =	21,143.1099 (mg/s)
	mass flux in river at SW-005	M_r5 =	39,469.6553 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	41,532.9706 (mg/s)
	mass flux into Colby Lake	M_cl =	53,545.0273 (mg/s)
	Average Flow		
	concentration in river at SW-001	C_r1 =	18.24591 (mg/L)
	concentration in river at SW-002	C_r2 =	17.57069 (mg/L)
	concentration in river at SW-003	C_r3 =	17.48148 (mg/L)
	concentration in river at SW-004	C_r4 =	17.25313 (mg/L)
	concentration in river at SW-004A	C_r4A =	17.11954 (mg/L)
	concentration in river at SW-005	C_r5 =	17.00244 (mg/L)
	concentration in river at USGS Gage	C_r6 =	16.99029 (mg/L)
	concentration in Colby Lake	C_cl =	16.96929 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case		Year 15	
Parameter		Cadmium	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0001 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0001 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0001 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0001 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0001 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0001 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0001 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0001 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0001 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0001 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0001 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0001 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0001 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0001 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0001 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0001 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0001 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0001 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.0149 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0149 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0149 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0149 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0001 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.0149 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0149 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0149 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0149 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0001 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0001 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0001 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0001 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0100 (mg/L)
		Average Flow	
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	0.01279 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00051 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.00283 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	0.01492 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.00086 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.00437 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00030 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00002 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00	0.00000 (mg/s)
	mass flux of liner leakage from cat 3 sumps to SW-003	M_gC3s_003	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.01611 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.00089 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00013 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00003 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00000 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	0.06554 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.00392 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.00004 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	0.10221 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.00642 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.01098 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.00133 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	0.06667 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.00331 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00110 (mg/s)
		Average Flow	
Mass balance at each node	mass flux in river at SW-001	M_r1 =	0.0161 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.0319 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.0366 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.0538 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.1233 (mg/s)
	mass flux in river at SW-005	M_r5 =	0.2319 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	0.2442 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	0.3153 (mg/s)
			Average Flow
	concentration in river at SW-001	C_r1 =	0.00010 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00010 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00010 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00010 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00010 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00010 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00010 (mg/L)
	concentration in Colby Lake	C_cl =	0.00010 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case	Year 15			
Parameter	Chloride			
Input concentration data	concentration of surface water into SW-001	C_s1 =	8.0000 (mg/L)	
	concentration of surface water into SW-002	C_s2 =	8.0000 (mg/L)	
	concentration of surface water into SW-003	C_s3 =	8.0000 (mg/L)	
	concentration of surface water into SW-004	C_s4 =	8.0000 (mg/L)	
	concentration of surface water into SW-004A	C_s4A =	8.0000 (mg/L)	
	concentration of surface water into SW-005	C_s5 =	8.0000 (mg/L)	
	concentration of surface water into USGS Gage	C_s6 =	8.0000 (mg/L)	
	concentration of surface water into Colby Lake	C_scl =	8.0000 (mg/L)	
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	8.0000 (mg/L)	
	concentration of surface water discharges from upstream of PM-1	C_sns =	1.6000 (mg/L)	
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)	
	concentration of ground water into SW-001	C_g1 =	6.6000 (mg/L)	
	concentration of ground water into SW-002	C_g2 =	6.6000 (mg/L)	
	concentration of ground water into SW-003	C_g3 =	6.6000 (mg/L)	
	concentration of ground water into SW-004	C_g4 =	6.6000 (mg/L)	
	concentration of ground water into SW-004A	C_g4A =	6.6000 (mg/L)	
	concentration of ground water into SW-005	C_g5 =	6.6000 (mg/L)	
	concentration of ground water into USGS Gage	C_g6 =	6.6000 (mg/L)	
	concentration of ground water into Colby Lake	C_gcl =	6.6000 (mg/L)	
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)	
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)	
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	- (mg/L)	
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	5.1204 (mg/L)	
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	14.2588 (mg/L)	
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.2369 (mg/L)	
	concentration of liner leakage from LOSP	C_gC4LO =	0.2300 (mg/L)	
	concentration of seepage from Overburden (Storage)	C_gOS =	5.3500 (mg/L)	
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	2.3300 (mg/L)	
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	- (mg/L)	
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	5.1204 (mg/L)	
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	14.2588 (mg/L)	
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.2369 (mg/L)	
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.2300 (mg/L)	
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	5.3500 (mg/L)	
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)	
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	6.6000 (mg/L)	
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	6.6000 (mg/L)	
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	6.6000 (mg/L)	
	concentration of liner leakage from WWTF ponc	C_gWTFp =	14.1000 (mg/L)	
			Average Flow	
	Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	1,023.42074 (mg/s)
		mass flux of ground water into SW-001	M_g1 =	33.62040 (mg/s)
mass flux of surface discharges from upstream of PM-1		M_sns =	45.28000 (mg/s)	
mass flux of surface water into SW-002		M_s2 =	1,193.43822 (mg/s)	
mass flux of ground water into SW-002		M_g2 =	56.46879 (mg/s)	
mass flux of surface water into SW-003		M_s3 =	349.40171 (mg/s)	
mass flux of ground water into SW-003		M_g3 =	20.07377 (mg/s)	
mass flux of seepage from East Pit to SW-003		M_gep_003 =	#N/A (mg/s)	
mass flux of liner leakage from Cat 3 stockpile to SW-003		M_gC3_003 =	0.00702 (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-003		M_gC3LO_00 =	0.00360 (mg/s)	
mass flux of liner leakage from cat 3 sumps to SW-003		M_gC3s_003 =	0.00000 (mg/s)	
mass flux of surface water into SW-004		M_s4 =	1,288.48116 (mg/s)	
mass flux of ground water into SW-004		M_g4 =	58.56146 (mg/s)	
mass flux of seepage from East Pit to SW-004		M_gep_004 =	#N/A (mg/s)	
mass flux of seepage from West Pit		M_gwp =	#N/A (mg/s)	
mass flux of liner leakage from Cat 3 stockpile to SW-004		M_gC3_004 =	- (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-004		M_gC3LO_00 =	0.00360 (mg/s)	
mass flux of liner leakage from Cat 4 stockpile		M_gC4 =	0.00003 (mg/s)	
mass flux of liner leakage from LOSP		M_gC4LO =	0.00005 (mg/s)	
mass flux of seepage from Overburden (Storage)		M_gOS =	11.57812 (mg/s)	
mass flux of liner leakage from Cat 3LO sumps to SW-004		M_gC3LOs_0 =	0.00001 (mg/s)	
mass flux of liner leakage from Cat 4 sumps		M_gC4s =	0.00000 (mg/s)	
mass flux of liner leakage from LOSP sumps		M_gC4LOs =	0.00000 (mg/s)	
mass flux of seepage from Overburden Ponds - PW1		M_gOp1 =	2.86285 (mg/s)	
mass flux of leakage from Haul Road Pond - PW2		M_gHRp2 =	0.00251 (mg/s)	
mass flux of leakage from Haul Road Pond - PW4		M_gHRp4 =	0.00538 (mg/s)	
mass flux of leakage from RTH Pond - PW3		M_gRTHp =	0.00000 (mg/s)	
mass flux of liner leakage from WWTF pond		M_gWTFp =	0.00303 (mg/s)	
mass flux of surface water into SW-004A		M_s4A =	5,242.92800 (mg/s)	
mass flux of ground water into SW-004A		M_g4A =	258.96350 (mg/s)	
mass flux of West Pit overflow		M_sms =	#N/A (mg/s)	
mass flux of liner leakage from Cat 1/2 stockpile		M_gC12 =	- (mg/s)	
mass flux of liner leakage from Cat 1/2 sumps		M_gC12s =	- (mg/s)	
mass flux of seepage from Overburden (Cat 1/2)		M_gO12 =	4.13828 (mg/s)	
mass flux of seepage from Overburden Pond - PW7		M_gOp7 =	#N/A (mg/s)	
mass flux of surface water into SW-005		M_s5 =	8,177.13930 (mg/s)	
mass flux of ground water into SW-005		M_g5 =	423.99060 (mg/s)	
mass flux of surface water into USGS Gage		M_s6 =	878.39698 (mg/s)	
mass flux of ground water into USGS Gage		M_g6 =	87.78660 (mg/s)	
mass flux of surface water into Colby Lake		M_scl =	5,333.98400 (mg/s)	
mass flux of ground water into Colby Lake		M_gcl =	218.53260 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP		M_shl =	88.29600 (mg/s)	
		Average Flow		
Mass balance at each node	mass flux in river at SW-001	M_r1 =	1,102.3211 (mg/s)	
	mass flux in river at SW-002	M_r2 =	2,352.2281 (mg/s)	
	mass flux in river at SW-003	M_r3 =	2,721.7143 (mg/s)	
	mass flux in river at SW-004	M_r4 =	4,083.2125 (mg/s)	
	mass flux in river at SW-004A	M_r4A =	9,589.2422 (mg/s)	
	mass flux in river at SW-005	M_r5 =	18,190.3721 (mg/s)	
	mass flux in river at USGS Gage	M_r6 =	19,156.5557 (mg/s)	
mass flux into Colby Lake	M_cl =	24,797.3683 (mg/s)		
		Average Flow		
Convert mass flux to concentration	concentration in river at SW-001	C_r1 =	6.83307 (mg/L)	
	concentration in river at SW-002	C_r2 =	7.37243 (mg/L)	
	concentration in river at SW-003	C_r3 =	7.44094 (mg/L)	
	concentration in river at SW-004	C_r4 =	7.58384 (mg/L)	
	concentration in river at SW-004A	C_r4A =	7.76439 (mg/L)	
	concentration in river at SW-005	C_r5 =	7.83591 (mg/L)	
	concentration in river at USGS Gage	C_r6 =	7.83656 (mg/L)	
	concentration in Colby Lake	C_cl =	7.85869 (mg/L)	

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case Parameter	Year 15 Cobalt		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0005 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0005 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0005 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0005 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0005 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0005 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0005 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0005 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0005 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0005 (mg/L)
	concentration of West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0017 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0017 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0017 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0017 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0017 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0017 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0017 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0017 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	0.0272 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	44.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	44.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	29.0355 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	11.7777 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0011 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	0.0013 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	0.0272 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C gC3s =	44.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	44.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	29.0355 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	11.7777 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0011 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0017 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0017 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0017 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	17.1000 (mg/L)
		Average Flow	
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	0.06396 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.00841 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.01415 (mg/s)
	mass flux of surface water into SW-002	M s2 =	0.07459 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.01412 (mg/s)
	mass flux of surface water into SW-003	M s3 =	0.02184 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.00502 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep 003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M gC3 003 =	0.06035 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO 00 =	0.01112 (mg/s)
	mass flux of liner leakage from cat 3 sumps to SW-003	M gC3s 003 =	0.00002 (mg/s)
	mass flux of surface water into SW-004	M s4 =	0.08053 (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.01464 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep 004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M gC3 004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO 00 =	0.01112 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00420 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00253 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.00240 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs 0 =	0.00004 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00001 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00001 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.00059 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00367 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	0.32768 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.06474 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M gC12 =	0.00650 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M gO12 =	0.00231 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	0.51107 (mg/s)
	mass flux of ground water into SW-005	M g5 =	0.10600 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	0.05490 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.02195 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	0.33337 (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	0.05463 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.00552 (mg/s)
		Average Flow	
Mass balance at each node	mass flux in river at SW-001	M r1 =	0.0865 (mg/s)
	mass flux in river at SW-002	M r2 =	0.1752 (mg/s)
	mass flux in river at SW-003	M r3 =	0.2736 (mg/s)
	mass flux in river at SW-004	M r4 =	0.3933 (mg/s)
	mass flux in river at SW-004A	M r4A =	0.7946 (mg/s)
	mass flux in river at SW-005	M r5 =	1.4116 (mg/s)
	mass flux in river at USGS Gage	M r6 =	1.4885 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M cl =	1.8820 (mg/s)
		Average Flow	
Convert mass flux to concentration	concentration in river at SW-001	C r1 =	0.00054 (mg/L)
	concentration in river at SW-002	C r2 =	0.00055 (mg/L)
	concentration in river at SW-003	C r3 =	0.00075 (mg/L)
	concentration in river at SW-004	C r4 =	0.00073 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00064 (mg/L)
	concentration in river at SW-005	C r5 =	0.00061 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00061 (mg/L)
	concentration in Colby Lake	C cl =	0.00060 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case	Year 15		
Parameter	Copper		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0017 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0017 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0017 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0017 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0017 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0017 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0017 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0017 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0190 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0012 (mg/L)
	concentration of West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0030 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0030 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0030 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0030 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0030 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0030 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0030 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0030 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	0.0920 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	202.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	202.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	5.2407 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	2.1258 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0214 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	0.0170 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	0.0920 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C gC3s =	202.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	202.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	5.2407 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	2.1258 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0214 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0030 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0030 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0030 (mg/L)
	concentration of liner leakage from WWTF pond	C gWTFp =	27.0000 (mg/L)
			Average Flow
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	0.21748 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.01503 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.03509 (mg/s)
	mass flux of surface water into SW-002	M s2 =	0.25361 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.02524 (mg/s)
	mass flux of surface water into SW-003	M s3 =	0.07425 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.00897 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M gC3_003 =	0.27705 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.05105 (mg/s)
	mass flux of liner leakage from cat 3 sumps to SW-003	M gC3s_003 =	0.00011 (mg/s)
	mass flux of surface water into SW-004	M s4 =	0.27380 (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.02618 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.05105 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00076 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00046 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.04640 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00020 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.01147 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00579 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	1.11412 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.11575 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M gC12 =	0.02200 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M gO12 =	0.03019 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	1.73764 (mg/s)
	mass flux of ground water into SW-005	M g5 =	0.18951 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	0.18666 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.03924 (mg/s)
mass flux of surface water into Colby Lake	M scl =	1.13347 (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	0.09768 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.20970 (mg/s)	
			Average Flow
Mass balance at each node	mass flux in river at SW-001	M r1 =	0.2676 (mg/s)
	mass flux in river at SW-002	M r2 =	0.5464 (mg/s)
	mass flux in river at SW-003	M r3 =	0.9579 (mg/s)
	mass flux in river at SW-004	M r4 =	1.3740 (mg/s)
	mass flux in river at SW-004A	M r4A =	2.6561 (mg/s)
	mass flux in river at SW-005	M r5 =	4.5832 (mg/s)
	mass flux in river at USGS Gage	M r6 =	4.8091 (mg/s)
	mass flux into Colby Lake	M cl =	6.2500 (mg/s)
Convert mass flux to concentration	Average Flow		
	concentration in river at SW-001	C r1 =	0.00166 (mg/L)
	concentration in river at SW-002	C r2 =	0.00171 (mg/L)
	concentration in river at SW-003	C r3 =	0.00262 (mg/L)
	concentration in river at SW-004	C r4 =	0.00255 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00215 (mg/L)
	concentration in river at SW-005	C r5 =	0.00197 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00197 (mg/L)
concentration in Colby Lake	C cl =	0.00198 (mg/L)	

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case		Year 15	
Parameter		Fluoride	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0700 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0700 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0700 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0700 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0700 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0700 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0700 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0700 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0700 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.1400 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.2800 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.2800 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.2800 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.2800 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.2800 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.2800 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.2800 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.2800 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0623 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.0622 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0622 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0622 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0625 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.2239 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.4200 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0623 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.0622 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0622 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0622 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0625 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.2239 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.2800 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.2800 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.2800 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	30.1000 (mg/L)
		Average Flow	
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	8.95493 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	1.42632 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	3.96200 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	10.44258 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	2.39565 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	3.05726 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.85161 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00009 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00002 (mg/s)
	mass flux of liner leakage from cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	11.27421 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	2.48443 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00002 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00001 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.48453 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.11981 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00011 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00023 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00646 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	45.87562 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	10.98633 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.01489 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.74596 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	71.54997 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	17.98748 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	7.68597 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	3.72428 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	46.67236 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	9.27108 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.77259 (mg/s)
		Average Flow	
Mass balance at each node	mass flux in river at SW-001	M_r1 =	14.3433 (mg/s)
	mass flux in river at SW-002	M_r2 =	27.1815 (mg/s)
	mass flux in river at SW-003	M_r3 =	31.0906 (mg/s)
	mass flux in river at SW-004	M_r4 =	45.4603 (mg/s)
	mass flux in river at SW-004A	M_r4A =	103.0831 (mg/s)
	mass flux in river at SW-005	M_r5 =	192.6205 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	204.0308 (mg/s)
	mass flux into Colby Lake	M_cl =	260.7468 (mg/s)
		Average Flow	
Convert mass flux to concentration	concentration in river at SW-001	C_r1 =	0.08891 (mg/L)
	concentration in river at SW-002	C_r2 =	0.08519 (mg/L)
	concentration in river at SW-003	C_r3 =	0.08500 (mg/L)
	concentration in river at SW-004	C_r4 =	0.08443 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.08347 (mg/L)
	concentration in river at SW-005	C_r5 =	0.08298 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.08346 (mg/L)
	concentration in Colby Lake	C_cl =	0.08263 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case		Year 15	
Parameter		Iron	
Input concentration data	concentration of surface water into SW-001	C_s1 =	1.6000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	1.6000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	1.6000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	1.6000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	1.6000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	1.6000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	1.6000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	1.6000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	1.6000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0300 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	2.8440 (mg/L)
	concentration of ground water into SW-002	C_g2 =	2.8440 (mg/L)
	concentration of ground water into SW-003	C_g3 =	2.8440 (mg/L)
	concentration of ground water into SW-004	C_g4 =	2.8440 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	2.8440 (mg/L)
	concentration of ground water into SW-005	C_g5 =	2.8440 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	2.8440 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	2.8440 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.8100 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	120.0170 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	184.0035 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	235.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	235.0000 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.2255 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.1500 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.8100 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	120.0170 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	184.0035 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	235.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	235.0000 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.2255 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	2.8440 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	2.8440 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	2.8440 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	106.0000 (mg/L)
		Average Flow	
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	204.68415 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	14.48734 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.84900 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	238.68764 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	24.33292 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	69.88034 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	8.64997 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.16461 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.04650 (mg/s)
	mass flux of liner leakage from cat 3 sumps to SW-003	M_gC3s_003 =	0.00006 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	257.69623 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	25.23466 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.04650 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.03395 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.05055 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.48801 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00018 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00011 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00021 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.12067 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00108 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00232 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.02274 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	1,048.58560 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	111.58972 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.19367 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00002 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.26641 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	1,635.42786 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	182.70140 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	175.67940 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	37.82804 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	1,066.79680 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	94.16768 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	17,65920 (mg/s)
		Average Flow	
Mass balance at each node	mass flux in river at SW-001	M_r1 =	220.0205 (mg/s)
	mass flux in river at SW-002	M_r2 =	483.0410 (mg/s)
	mass flux in river at SW-003	M_r3 =	561.7825 (mg/s)
	mass flux in river at SW-004	M_r4 =	845.4798 (mg/s)
	mass flux in river at SW-004A	M_r4A =	2,006.1152 (mg/s)
	mass flux in river at SW-005	M_r5 =	3,824.2445 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	4,037.7519 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	5,216.3756 (mg/s)
			Average Flow
	concentration in river at SW-001	C_r1 =	1.36386 (mg/L)
	concentration in river at SW-002	C_r2 =	1.51396 (mg/L)
	concentration in river at SW-003	C_r3 =	1.53587 (mg/L)
	concentration in river at SW-004	C_r4 =	1.57033 (mg/L)
	concentration in river at SW-004A	C_r4A =	1.62435 (mg/L)
	concentration in river at SW-005	C_r5 =	1.64738 (mg/L)
	concentration in river at USGS Gage	C_r6 =	1.65176 (mg/L)
	concentration in Colby Lake	C_cl =	1.65315 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case Parameter	Year 15 Hardness		
Input concentration data	concentration of surface water into SW-001	C s1 =	110.0000 (mg/L)
	concentration of surface water into SW-002	C s2 =	110.0000 (mg/L)
	concentration of surface water into SW-003	C s3 =	110.0000 (mg/L)
	concentration of surface water into SW-004	C s4 =	110.0000 (mg/L)
	concentration of surface water into SW-004A	C s4A =	110.0000 (mg/L)
	concentration of surface water into SW-005	C s5 =	110.0000 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	110.0000 (mg/L)
	concentration of surface water into Colby Lake	C scl =	110.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	110.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	110.0000 (mg/L)
	concentration of West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	66.4200 (mg/L)
	concentration of ground water into SW-002	C g2 =	66.4200 (mg/L)
	concentration of ground water into SW-003	C g3 =	66.4200 (mg/L)
	concentration of ground water into SW-004	C g4 =	66.4200 (mg/L)
	concentration of ground water into SW-004A	C g4A =	66.4200 (mg/L)
	concentration of ground water into SW-005	C g5 =	66.4200 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	66.4200 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	66.4200 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	1 412.9373 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	5 435.6906 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	5 435.6906 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	5 046.0354 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	2 395.6613 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	43.5200 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	71.5000 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	1 412.9373 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C gC3s =	5 435.6906 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	5 435.6906 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	5 046.0354 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	2 395.6613 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	43.5200 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	66.4200 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	66.4200 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	66.4200 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	4,083.000 (mg/L)
	Average Flow		
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	14,072.03511 (mg/s)
	mass flux of ground water into SW-001	M g1 =	338.34348 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	3,113.00000 (mg/s)
	mass flux of surface water into SW-002	M s2 =	16,409.77552 (mg/s)
	mass flux of ground water into SW-002	M g2 =	568.28140 (mg/s)
	mass flux of surface water into SW-003	M s3 =	4,804.27355 (mg/s)
	mass flux of ground water into SW-003	M g3 =	202.01510 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	7.45526 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	1.37380 (mg/s)
	mass flux of liner leakage from cat 3 sumps to SW-003	M_gC3s_003 =	0.00286 (mg/s)
	mass flux of surface water into SW-004	M s4 =	17,716.61599 (mg/s)
	mass flux of ground water into SW-004	M g4 =	589.34119 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	1.37380 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.72907 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.51537 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	94.18314 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00534 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00230 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00218 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	23.28806 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.02527 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.05414 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00002 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.87609 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	72,090.26005 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	2,606.11445 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	337.83603 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.03096 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	126.99004 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	112,435.66531 (mg/s)
	mass flux of ground water into SW-005	M g5 =	4,266.88722 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	12,077.95847 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	883.45242 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	73,342.28000 (mg/s)
mass flux of ground water into Colby Lake	M gcl =	2,199.23262 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	1,214.07000 (mg/s)	
Average Flow			
Mass balance at each node	mass flux in river at SW-001	M r1 =	17,523.3786 (mg/s)
	mass flux in river at SW-002	M r2 =	34,501.4355 (mg/s)
	mass flux in river at SW-003	M r3 =	39,516.5561 (mg/s)
	mass flux in river at SW-004	M r4 =	57,943.5681 (mg/s)
	mass flux in river at SW-004A	M r4A =	133,104.7996 (mg/s)
	mass flux in river at SW-005	M r5 =	249,807.3521 (mg/s)
	mass flux in river at USGS Gage	M r6 =	262,768.7630 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M cl =	339,524.3456 (mg/s)
	concentration in river at SW-001	C r1 =	108.62389 (mg/L)
	concentration in river at SW-002	C r2 =	108.13556 (mg/L)
	concentration in river at SW-003	C r3 =	108.03498 (mg/L)
	concentration in river at SW-004	C r4 =	107.61980 (mg/L)
	concentration in river at SW-004A	C r4A =	107.77472 (mg/L)
	concentration in river at SW-005	C r5 =	107.61011 (mg/L)
	concentration in river at USGS Gage	C r6 =	107.49334 (mg/L)
	concentration in Colby Lake	C cl =	107.60077 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case		Year 15	
Parameter		Potassium	
Input concentration data	concentration of surface water into SW-001	C_s1 =	1.3000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	1.3000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	1.3000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	1.3000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	1.3000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	1.3000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	1.3000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	1.3000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	1.3000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	2.7000 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	1.7500 (mg/L)
	concentration of ground water into SW-002	C_g2 =	1.7500 (mg/L)
	concentration of ground water into SW-003	C_g3 =	1.7500 (mg/L)
	concentration of ground water into SW-004	C_g4 =	1.7500 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	1.7500 (mg/L)
	concentration of ground water into SW-005	C_g5 =	1.7500 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	1.7500 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	1.7500 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	49.0000 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	38.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	38.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	38.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	38.0000 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	2.2600 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	4.4500 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	49.0000 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	38.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	38.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	38.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	38.0000 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	2.2600 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	1.7500 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	1.7500 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	1.7500 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	56.7000 (mg/L)
Convert concentration to mass flux			Average Flow
	mass flux of surface water into SW-001	M_s1 =	166.30587 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	8.91450 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	76.41000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	193.93371 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	14.97279 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	56.77778 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	5.32259 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.05212 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00960 (mg/s)
	mass flux of liner leakage from cat 3 sumps to SW-003	M_gC3s_003 =	0.00002 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	209.37819 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	15.52766 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00960 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00549 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00817 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	4.89094 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00004 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00002 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00003 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	1.20935 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00067 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00143 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.01217 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	851.97580 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	68.66456 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	11.71599 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00107 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	7.90358 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	1,328.78514 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	112.42175 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	142.73951 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	23.27675 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	866.77240 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	57.94425 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	14.34810 (mg/s)
Mass balance at each node			Average Flow
	mass flux in river at SW-001	M_r1 =	251.6304 (mg/s)
	mass flux in river at SW-002	M_r2 =	460.5369 (mg/s)
	mass flux in river at SW-003	M_r3 =	522.8990 (mg/s)
	mass flux in river at SW-004	M_r4 =	753.7427 (mg/s)
	mass flux in river at SW-004A	M_r4A =	1,694.0037 (mg/s)
	mass flux in river at SW-005	M_r5 =	3,135.2106 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	3,301.2269 (mg/s)
	mass flux into Colby Lake	M_cl =	4,240.2916 (mg/s)
Convert mass flux to concentration			Average Flow
	concentration in river at SW-001	C_r1 =	1.55981 (mg/L)
	concentration in river at SW-002	C_r2 =	1.44343 (mg/L)
	concentration in river at SW-003	C_r3 =	1.42902 (mg/L)
	concentration in river at SW-004	C_r4 =	1.39994 (mg/L)
	concentration in river at SW-004A	C_r4A =	1.37163 (mg/L)
	concentration in river at SW-005	C_r5 =	1.35056 (mg/L)
	concentration in river at USGS Gage	C_r6 =	1.35046 (mg/L)
	concentration in Colby Lake	C_cl =	1.34382 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case		Year 15	
Parameter		Magnesium	
Input concentration data	concentration of surface water into SW-001	C_s1 =	8.0000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	8.0000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	8.0000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	8.0000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	8.0000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	8.0000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	8.0000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	8.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	8.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	10.5000 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	8.0200 (mg/L)
	concentration of ground water into SW-002	C_g2 =	8.0200 (mg/L)
	concentration of ground water into SW-003	C_g3 =	8.0200 (mg/L)
	concentration of ground water into SW-004	C_g4 =	8.0200 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	8.0200 (mg/L)
	concentration of ground water into SW-005	C_g5 =	8.0200 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	8.0200 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	8.0200 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	79.1470 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	1,030.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	1,030.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	935.3138 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	379.3930 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	4.8800 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	9.0100 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	79.1470 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	1,030.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	1,030.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	935.3138 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	379.3930 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	4.8800 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	8.0200 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	8.0200 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	8.0200 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	615.0000 (mg/L)
Convert concentration to mass flux	Average Flow		
	mass flux of surface water into SW-001	M_s1 =	1,023.42074 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	40.85388 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	297.15000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	1,193.43822 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	68.61814 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	349.40171 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	24.39267 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	1.41268 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.26032 (mg/s)
	mass flux of liner leakage from cat 3 sumps to SW-003	M_gC3s_003 =	0.00054 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	1,288.48116 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	71.16104 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.26032 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.13514 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.08162 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	10.56098 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00101 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00043 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00035 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	2.61135 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00305 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00654 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.13196 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	5,242.92800 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	314.67988 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	18.92421 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00173 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	16.00252 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	8,177.13930 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	515.21282 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	878.39698 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	106.67402 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	5,333.98400 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	265.55022 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	88.29600 (mg/s)
Mass balance at each node	Average Flow		
	mass flux in river at SW-001	M_r1 =	1,361.4248 (mg/s)
	mass flux in river at SW-002	M_r2 =	2,623.4810 (mg/s)
	mass flux in river at SW-003	M_r3 =	2,998.9469 (mg/s)
	mass flux in river at SW-004	M_r4 =	4,372.3838 (mg/s)
	mass flux in river at SW-004A	M_r4A =	9,964.9202 (mg/s)
	mass flux in river at SW-005	M_r5 =	18,657.2723 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	19,642.3433 (mg/s)
	mass flux into Colby Lake	M_cl =	25,330.1735 (mg/s)
	Average Flow		
	concentration in river at SW-001	C_r1 =	8.43920 (mg/L)
	concentration in river at SW-002	C_r2 =	8.22260 (mg/L)
	concentration in river at SW-003	C_r3 =	8.19888 (mg/L)
	concentration in river at SW-004	C_r4 =	8.12092 (mg/L)
	concentration in river at SW-004A	C_r4A =	8.06858 (mg/L)
	concentration in river at SW-005	C_r5 =	8.03704 (mg/L)
	concentration in river at USGS Gage	C_r6 =	8.03528 (mg/L)
	concentration in Colby Lake	C_cl =	8.02754 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case		Year 15	
Parameter		Manganese	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.1500 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.1500 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.1500 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.1500 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.1500 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.1500 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.1500 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.1500 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.1500 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0086 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.1240 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.1240 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.1240 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.1240 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.1240 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.1240 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.1240 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.1240 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.5937 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	47.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	47.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	47.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	26.6303 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.1604 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.1160 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.5937 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	47.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	47.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	47.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	26.6303 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.1604 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.1240 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.1240 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.1240 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	29.5000 (mg/L)
		Average Flow	
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	19.18914 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.63166 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.24338 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	22.37697 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	1.06093 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	6.55128 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.37714 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.06446 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.01188 (mg/s)
	mass flux of liner leakage from cat 3 sumps to SW-003	M_gC3s_003 =	0.00002 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	24.15902 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	1.10025 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.01188 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00679 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00573 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.34711 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00005 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00002 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00002 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.08583 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00005 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00010 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00633 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	98.30490 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	4.86537 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.14197 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.20603 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	153.32136 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	7.96588 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	16.46994 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	1.64932 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	100.01220 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	4.10576 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	1.65555 (mg/s)
		Average Flow	
Mass balance at each node	mass flux in river at SW-001	M_r1 =	20.0642 (mg/s)
	mass flux in river at SW-002	M_r2 =	43.5021 (mg/s)
	mass flux in river at SW-003	M_r3 =	50.5069 (mg/s)
	mass flux in river at SW-004	M_r4 =	76.2300 (mg/s)
	mass flux in river at SW-004A	M_r4A =	179.7483 (mg/s)
	mass flux in river at SW-005	M_r5 =	341.0356 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	359.1548 (mg/s)
	mass flux into Colby Lake	M_cl =	464.9283 (mg/s)
		Average Flow	
Convert mass flux to concentration	concentration in river at SW-001	C_r1 =	0.12437 (mg/L)
	concentration in river at SW-002	C_r2 =	0.13635 (mg/L)
	concentration in river at SW-003	C_r3 =	0.13808 (mg/L)
	concentration in river at SW-004	C_r4 =	0.14158 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.14554 (mg/L)
	concentration in river at SW-005	C_r5 =	0.14891 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.14892 (mg/L)
	concentration in Colby Lake	C_cl =	0.14734 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case	Year 15		
Parameter	Sodium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	2.5000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	2.5000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	2.5000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	2.5000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	2.5000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	2.5000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	2.5000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	2.5000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	2.5000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	4.8000 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	13.3300 (mg/L)
	concentration of ground water into SW-002	C_g2 =	13.3300 (mg/L)
	concentration of ground water into SW-003	C_g3 =	13.3300 (mg/L)
	concentration of ground water into SW-004	C_g4 =	13.3300 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	13.3300 (mg/L)
	concentration of ground water into SW-005	C_g5 =	13.3300 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	13.3300 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	13.3300 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	443.6984 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	338.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	338.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	338.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	143.3582 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	4.6000 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	7.1900 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	443.6984 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	338.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_g3LOs =	338.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	338.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	143.3582 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	4.6000 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	13.3300 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	13.3300 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	13.3300 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	524.0000 (mg/L)
Convert concentration to mass flux	Average Flow		
	mass flux of surface water into SW-001	M_s1 =	319.81898 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	67.90302 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	135.84000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	372.94944 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	114.04985 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	109.18804 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	40.54293 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.46358 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.08543 (mg/s)
	mass flux of liner leakage from cat 3 sumps to SW-003	M_gC3s_003 =	0.00018 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	402.65036 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	118.27639 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.08543 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.04884 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.03084 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	9.95502 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00033 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00015 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00013 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	2.46151 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00507 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.01087 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.11243 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	1,638.41500 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	523.02779 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	106.08914 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00972 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	12.77005 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	2,555.35603 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	856.33253 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	274.49906 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	177.30233 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	1,666.87000 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	441.36963 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	27.59250 (mg/s)
Mass balance at each node	Average Flow		
	mass flux in river at SW-001	M_r1 =	523.5620 (mg/s)
	mass flux in river at SW-002	M_r2 =	1,010.5613 (mg/s)
	mass flux in river at SW-003	M_r3 =	1,160.8414 (mg/s)
	mass flux in river at SW-004	M_r4 =	1,694.4788 (mg/s)
	mass flux in river at SW-004A	M_r4A =	3,974.7905 (mg/s)
	mass flux in river at SW-005	M_r5 =	7,386.4791 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	7,838.2805 (mg/s)
	mass flux into Colby Lake	M_cl =	9,974.1126 (mg/s)
Convert mass flux to concentration	Average Flow		
	concentration in river at SW-001	C_r1 =	3.24546 (mg/L)
	concentration in river at SW-002	C_r2 =	3.16734 (mg/L)
	concentration in river at SW-003	C_r3 =	3.17364 (mg/L)
	concentration in river at SW-004	C_r4 =	3.14719 (mg/L)
	concentration in river at SW-004A	C_r4A =	3.21838 (mg/L)
	concentration in river at SW-005	C_r5 =	3.18189 (mg/L)
	concentration in river at USGS Gage	C_r6 =	3.20648 (mg/L)
	concentration in Colby Lake	C_cl =	3.16096 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case	Year 15		
Parameter	Nickel		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0016 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0016 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0016 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0016 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0016 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0016 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0016 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0016 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0033 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0016 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0163 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0163 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0163 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0163 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0163 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0163 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0163 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0163 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.1762 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	623.5637 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	762.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	354.8250 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	143.9283 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0080 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0190 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.1762 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	623.5637 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_g3LOs =	762.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	354.8250 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	143.9283 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0080 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0163 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0163 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0163 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	254.0000 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	0.19957 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.08293 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.04387 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	0.23272 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.13929 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.06813 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.04952 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.85524 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.19259 (mg/s)
	mass flux of liner leakage from cat 3 sumps to SW-003	M_gC3s_003 =	0.00033 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.25125 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.14445 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.19259 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.05127 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.03096 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.01725 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00075 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00016 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00013 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00426 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00001 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00001 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.05450 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	1.02237 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.63878 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.04213 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.03375 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	1.59454 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	1.04584 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.17129 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.21654 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	1.04013 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.53905 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.03642 (mg/s)
Mass balance at each node	mass flux in river at SW-001	M_r1 =	0.3264 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.6964 (mg/s)
	mass flux in river at SW-003	M_r3 =	1.8642 (mg/s)
	mass flux in river at SW-004	M_r4 =	2.6118 (mg/s)
	mass flux in river at SW-004A	M_r4A =	4.3488 (mg/s)
	mass flux in river at SW-005	M_r5 =	6.9892 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	7.3770 (mg/s)
Convert mass flux to concentration	concentration in river at SW-001	C_r1 =	0.00202 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00219 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00510 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00485 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00352 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00301 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00302 (mg/L)
concentration in Colby Lake		C_cl =	0.00285 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case Parameter	Year 15 Lead		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0005 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0005 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0005 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0005 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0005 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0005 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0005 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0005 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0005 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0002 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0011 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0011 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0011 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0011 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0011 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0011 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0011 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0011 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0210 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.0528 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0528 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0528 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0528 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0007 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0210 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.0528 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0528 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0528 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0528 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0007 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0011 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0011 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0011 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0600 (mg/L)
Convert concentration to mass flux	Average Flow		
	mass flux of surface water into SW-001	M_s1 =	0.06396 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00571 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.00425 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	0.07459 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.00958 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.02184 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00341 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00007 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00001 (mg/s)
	mass flux of liner leakage from cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.08053 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.00994 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00001 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00146 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00036 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00001 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	0.32768 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.04395 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.00503 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	0.51107 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.07195 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.05490 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.01490 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	0.33337 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.03708 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00552 (mg/s)
Mass balance at each node	Average Flow		
	mass flux in river at SW-001	M_r1 =	0.0739 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.1581 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.1834 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.2757 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.6524 (mg/s)
	mass flux in river at SW-005	M_r5 =	1.2354 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	1.3052 (mg/s)
	mass flux into Colby Lake	M_cl =	1.6812 (mg/s)
Convert mass flux to concentration	Average Flow		
	concentration in river at SW-001	C_r1 =	0.00046 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00050 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00050 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00051 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00053 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00053 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00053 (mg/L)
	concentration in Colby Lake	C_cl =	0.00053 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case	Year 15			
Parameter	Antimony			
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0015 (mg/L)	
	concentration of surface water into SW-002	C_s2 =	0.0015 (mg/L)	
	concentration of surface water into SW-003	C_s3 =	0.0015 (mg/L)	
	concentration of surface water into SW-004	C_s4 =	0.0015 (mg/L)	
	concentration of surface water into SW-004A	C_s4A =	0.0015 (mg/L)	
	concentration of surface water into SW-005	C_s5 =	0.0015 (mg/L)	
	concentration of surface water into USGS Gage	C_s6 =	0.0015 (mg/L)	
	concentration of surface water into Colby Lake	C_scl =	0.0015 (mg/L)	
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0015 (mg/L)	
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0015 (mg/L)	
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)	
	concentration of ground water into SW-001	C_g1 =	0.0015 (mg/L)	
	concentration of ground water into SW-002	C_g2 =	0.0015 (mg/L)	
	concentration of ground water into SW-003	C_g3 =	0.0015 (mg/L)	
	concentration of ground water into SW-004	C_g4 =	0.0015 (mg/L)	
	concentration of ground water into SW-004A	C_g4A =	0.0015 (mg/L)	
	concentration of ground water into SW-005	C_g5 =	0.0015 (mg/L)	
	concentration of ground water into USGS Gage	C_g6 =	0.0015 (mg/L)	
	concentration of ground water into Colby Lake	C_gcl =	0.0015 (mg/L)	
	concentration of ground water seepage from East Pit	C_ggp =	#N/A (mg/L)	
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)	
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0800 (mg/L)	
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.0800 (mg/L)	
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0800 (mg/L)	
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0800 (mg/L)	
	concentration of liner leakage from LOSP	C_gC4LO =	0.0603 (mg/L)	
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0003 (mg/L)	
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0004 (mg/L)	
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0800 (mg/L)	
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.0800 (mg/L)	
	concentration of liner leakage from Cat 3LO sumps	C_g3LOs =	0.0800 (mg/L)	
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0800 (mg/L)	
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0603 (mg/L)	
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0003 (mg/L)	
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)	
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0015 (mg/L)	
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0015 (mg/L)	
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0015 (mg/L)	
	concentration of liner leakage from WWTF ponc	C_gWTFp =	0.1238 (mg/L)	
			Average Flow	
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	0.19189 (mg/s)	
	mass flux of ground water into SW-001	M_g1 =	0.00764 (mg/s)	
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.04245 (mg/s)	
	mass flux of surface water into SW-002	M_s2 =	0.22377 (mg/s)	
	mass flux of ground water into SW-002	M_g2 =	0.01283 (mg/s)	
	mass flux of surface water into SW-003	M_s3 =	0.06551 (mg/s)	
	mass flux of ground water into SW-003	M_g3 =	0.00456 (mg/s)	
	mass flux of seepage from East Pit to SW-003	M_ggp_003 =	#N/A (mg/s)	
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00011 (mg/s)	
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00002 (mg/s)	
	mass flux of liner leakage from cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)	
	mass flux of surface water into SW-004	M_s4 =	0.24159 (mg/s)	
	mass flux of ground water into SW-004	M_g4 =	0.01331 (mg/s)	
	mass flux of seepage from East Pit to SW-004	M_ggp_004 =	#N/A (mg/s)	
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)	
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)	
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00002 (mg/s)	
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00001 (mg/s)	
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00001 (mg/s)	
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00065 (mg/s)	
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00000 (mg/s)	
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)	
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)	
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00016 (mg/s)	
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)	
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)	
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)	
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00003 (mg/s)	
	mass flux of surface water into SW-004A	M_s4A =	0.98305 (mg/s)	
	mass flux of ground water into SW-004A	M_g4A =	0.05886 (mg/s)	
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)	
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.01913 (mg/s)	
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)	
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.00071 (mg/s)	
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)	
	mass flux of surface water into SW-005	M_s5 =	1.53321 (mg/s)	
	mass flux of ground water into SW-005	M_g5 =	0.09636 (mg/s)	
	mass flux of surface water into USGS Gage	M_s6 =	0.16470 (mg/s)	
	mass flux of ground water into USGS Gage	M_g6 =	0.01995 (mg/s)	
	mass flux of surface water into Colby Lake	M_scl =	1.00012 (mg/s)	
mass flux of ground water into Colby Lake	M_gcl =	0.04967 (mg/s)		
mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.01656 (mg/s)		
Mass balance at each node				Average Flow
	mass flux in river at SW-001	M_r1 =	0.2420 (mg/s)	
	mass flux in river at SW-002	M_r2 =	0.4786 (mg/s)	
	mass flux in river at SW-003	M_r3 =	0.5488 (mg/s)	
	mass flux in river at SW-004	M_r4 =	0.8046 (mg/s)	
	mass flux in river at SW-004A	M_r4A =	1.8663 (mg/s)	
	mass flux in river at SW-005	M_r5 =	3.4959 (mg/s)	
	mass flux in river at USGS Gage	M_r6 =	3.6805 (mg/s)	
	mass flux into Colby Lake	M_cl =	4.7469 (mg/s)	
Convert mass flux to concentration				Average Flow
	concentration in river at SW-001	C_r1 =	0.00150 (mg/L)	
	concentration in river at SW-002	C_r2 =	0.00150 (mg/L)	
	concentration in river at SW-003	C_r3 =	0.00150 (mg/L)	
	concentration in river at SW-004	C_r4 =	0.00149 (mg/L)	
	concentration in river at SW-004A	C_r4A =	0.00151 (mg/L)	
	concentration in river at SW-005	C_r5 =	0.00151 (mg/L)	
	concentration in river at USGS Gage	C_r6 =	0.00151 (mg/L)	
	concentration in Colby Lake	C_cl =	0.00150 (mg/L)	

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case		Year 15	
Parameter		Selenium	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0005 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0005 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0005 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0005 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0005 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0005 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0005 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0005 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0005 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0005 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0019 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0019 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0019 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0019 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0019 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0019 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0019 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0019 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0029 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.0029 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0029 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0029 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0029 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0004 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0019 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0029 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.0029 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0029 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0029 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0029 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0004 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0019 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0019 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0019 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0090 (mg/L)
		Average Flow	
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	0.06396 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00973 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.01415 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	0.07459 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.01634 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.02184 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00581 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00000 (mg/s)
	mass flux of liner leakage from cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.08053 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.01695 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00096 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00024 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00000 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	0.32768 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.07494 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.00069 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.00337 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	0.51107 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.12270 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.05490 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.02540 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	0.33337 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.06324 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00552 (mg/s)
		Average Flow	
Mass balance at each node	mass flux in river at SW-001	M_r1 =	0.0878 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.1788 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.2064 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.3051 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.7118 (mg/s)
	mass flux in river at SW-005	M_r5 =	1.3456 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	1.4259 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	1.8280 (mg/s)
			Average Flow
	concentration in river at SW-001	C_r1 =	0.00054 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00056 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00056 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00057 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00058 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00058 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00058 (mg/L)
	concentration in Colby Lake	C_cl =	0.00058 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case Parameter	Year 15 sulfate		
Input concentration data	concentration of surface water into SW-001	C s1 =	9.0000 (mg/L)
	concentration of surface water into SW-002	C s2 =	9.0000 (mg/L)
	concentration of surface water into SW-003	C s3 =	9.0000 (mg/L)
	concentration of surface water into SW-004	C s4 =	9.0000 (mg/L)
	concentration of surface water into SW-004A	C s4A =	9.0000 (mg/L)
	concentration of surface water into SW-005	C s5 =	9.0000 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	9.0000 (mg/L)
	concentration of surface water into Colby Lake	C scl =	9.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	22.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	22.0000 (mg/L)
	concentration of West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	16.1300 (mg/L)
	concentration of ground water into SW-002	C g2 =	16.1300 (mg/L)
	concentration of ground water into SW-003	C g3 =	16.1300 (mg/L)
	concentration of ground water into SW-004	C g4 =	16.1300 (mg/L)
	concentration of ground water into SW-004A	C g4A =	16.1300 (mg/L)
	concentration of ground water into SW-005	C g5 =	16.1300 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	16.1300 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	16.1300 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	980.8782 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	9,600.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	9,600.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	9,600.0000 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	9,600.0000 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	35.1700 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	68.3000 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	980.8782 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C gC3s =	9,600.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	9,600.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	9,600.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	9,600.0000 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	35.1700 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	16.1300 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	16.1300 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	16.1300 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	7,276.0000 (mg/L)
Convert concentration to mass flux	Average Flow		
	mass flux of surface water into SW-001	M s1 =	1,151.34833 (mg/s)
	mass flux of ground water into SW-001	M g1 =	82.16622 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	622.60000 (mg/s)
	mass flux of surface water into SW-002	M s2 =	1,342.61800 (mg/s)
	mass flux of ground water into SW-002	M g2 =	138.00631 (mg/s)
	mass flux of surface water into SW-003	M s3 =	393.07693 (mg/s)
	mass flux of ground water into SW-003	M g3 =	49.05907 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep 003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M gC3 003 =	13.16677 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO 00 =	2,42628 (mg/s)
	mass flux of liner leakage from cat 3 sumps to SW-003	M gC3s 003 =	0.00505 (mg/s)
	mass flux of surface water into SW-004	M s4 =	1,449.54131 (mg/s)
	mass flux of ground water into SW-004	M g4 =	143.12065 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep 004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M gC3 004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO 00 =	2,42628 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	1,38704 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	2,06522 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	76.11262 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs 0 =	0.00942 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00438 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00875 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	18.81988 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00614 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.01315 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	1,56122 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	5,898.29400 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	632.89109 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M gC12 =	234.52986 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M gC12s =	0.02149 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M gO12 =	121.30657 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	9,199.28171 (mg/s)
	mass flux of ground water into SW-005	M g5 =	1,036.20733 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	988.19660 (mg/s)
mass flux of ground water into USGS Gage	M g6 =	214.54513 (mg/s)	
mass flux of surface water into Colby Lake	M scl =	6,000.73200 (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	534.08043 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	99.33300 (mg/s)	
Mass balance at each node	Average Flow		
	mass flux in river at SW-001	M r1 =	1,856.1145 (mg/s)
	mass flux in river at SW-002	M r2 =	3,336.7389 (mg/s)
	mass flux in river at SW-003	M r3 =	3,794.4730 (mg/s)
	mass flux in river at SW-004	M r4 =	5,489.5490 (mg/s)
	mass flux in river at SW-004A	M r4A =	12,376.5920 (mg/s)
	mass flux in river at SW-005	M r5 =	22,612.0811 (mg/s)
	mass flux in river at USGS Gage	M r6 =	23,814.8228 (mg/s)
	mass flux into Colby Lake	M cl =	30,448.9682 (mg/s)
Convert mass flux to concentration	Average Flow		
	concentration in river at SW-001	C r1 =	11.50568 (mg/L)
	concentration in river at SW-002	C r2 =	10.45812 (mg/L)
	concentration in river at SW-003	C r3 =	10.37377 (mg/L)
	concentration in river at SW-004	C r4 =	10.19585 (mg/L)
	concentration in river at SW-004A	C r4A =	10.02130 (mg/L)
	concentration in river at SW-005	C r5 =	9.74066 (mg/L)
	concentration in river at USGS Gage	C r6 =	9.74216 (mg/L)
	concentration in Colby Lake	C cl =	9.64977 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case	Year 15			
Parameter	Thallium			
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0004 (mg/L)	
	concentration of surface water into SW-002	C_s2 =	0.0004 (mg/L)	
	concentration of surface water into SW-003	C_s3 =	0.0004 (mg/L)	
	concentration of surface water into SW-004	C_s4 =	0.0004 (mg/L)	
	concentration of surface water into SW-004A	C_s4A =	0.0004 (mg/L)	
	concentration of surface water into SW-005	C_s5 =	0.0004 (mg/L)	
	concentration of surface water into USGS Gage	C_s6 =	0.0004 (mg/L)	
	concentration of surface water into Colby Lake	C_scl =	0.0004 (mg/L)	
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0004 (mg/L)	
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0003 (mg/L)	
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)	
	concentration of ground water into SW-001	C_g1 =	0.0000 (mg/L)	
	concentration of ground water into SW-002	C_g2 =	0.0000 (mg/L)	
	concentration of ground water into SW-003	C_g3 =	0.0000 (mg/L)	
	concentration of ground water into SW-004	C_g4 =	0.0000 (mg/L)	
	concentration of ground water into SW-004A	C_g4A =	0.0000 (mg/L)	
	concentration of ground water into SW-005	C_g5 =	0.0000 (mg/L)	
	concentration of ground water into USGS Gage	C_g6 =	0.0000 (mg/L)	
	concentration of ground water into Colby Lake	C_gcl =	0.0000 (mg/L)	
	concentration of ground water seepage from East Pit	C_ggp =	#N/A (mg/L)	
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)	
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0000 (mg/L)	
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.0001 (mg/L)	
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0001 (mg/L)	
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0001 (mg/L)	
	concentration of liner leakage from LOSP	C_gC4LO =	0.0001 (mg/L)	
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0000 (mg/L)	
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	- (mg/L)	
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0000 (mg/L)	
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.0001 (mg/L)	
	concentration of liner leakage from Cat 3LO sumps	C_g3LOs =	0.0001 (mg/L)	
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0001 (mg/L)	
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0001 (mg/L)	
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0000 (mg/L)	
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)	
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0000 (mg/L)	
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0000 (mg/L)	
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0000 (mg/L)	
	concentration of liner leakage from WWTF ponc	C_gWTFp =	0.0041 (mg/L)	
			Average Flow	
	Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	0.05117 (mg/s)
		mass flux of ground water into SW-001	M_g1 =	0.00002 (mg/s)
mass flux of surface discharges from upstream of PM-1		M_sns =	0.00809 (mg/s)	
mass flux of surface water into SW-002		M_s2 =	0.05967 (mg/s)	
mass flux of ground water into SW-002		M_g2 =	0.00003 (mg/s)	
mass flux of surface water into SW-003		M_s3 =	0.01747 (mg/s)	
mass flux of ground water into SW-003		M_g3 =	0.00001 (mg/s)	
mass flux of seepage from East Pit to SW-003		M_ggp_003 =	#N/A (mg/s)	
mass flux of liner leakage from Cat 3 stockpile to SW-003		M_gC3_003 =	0.00000 (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-003		M_gC3LO_00 =	0.00000 (mg/s)	
mass flux of liner leakage from cat 3 sumps to SW-003		M_gC3s_003 =	0.00000 (mg/s)	
mass flux of surface water into SW-004		M_s4 =	0.06442 (mg/s)	
mass flux of ground water into SW-004		M_g4 =	0.00004 (mg/s)	
mass flux of seepage from East Pit to SW-004		M_ggp_004 =	#N/A (mg/s)	
mass flux of seepage from West Pit		M_gwp =	#N/A (mg/s)	
mass flux of liner leakage from Cat 3 stockpile to SW-004		M_gC3_004 =	- (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-004		M_gC3LO_00 =	0.00000 (mg/s)	
mass flux of liner leakage from Cat 4 stockpile		M_gC4 =	0.00000 (mg/s)	
mass flux of liner leakage from LOSP		M_gC4LO =	0.00000 (mg/s)	
mass flux of seepage from Overburden (Storage)		M_gOS =	0.00009 (mg/s)	
mass flux of liner leakage from Cat 3LO sumps to SW-004		M_gC3LOs_0 =	0.00000 (mg/s)	
mass flux of liner leakage from Cat 4 sumps		M_gC4s =	0.00000 (mg/s)	
mass flux of liner leakage from LOSP sumps		M_gC4LOs =	0.00000 (mg/s)	
mass flux of seepage from Overburden Ponds - PW1		M_gOp1 =	0.00002 (mg/s)	
mass flux of leakage from Haul Road Pond - PW2		M_gHRp2 =	0.00000 (mg/s)	
mass flux of leakage from Haul Road Pond - PW4		M_gHRp4 =	0.00000 (mg/s)	
mass flux of leakage from RTH Pond - PW3		M_gRTHp =	0.00000 (mg/s)	
mass flux of liner leakage from WWTF pond		M_gWTFp =	0.00000 (mg/s)	
mass flux of surface water into SW-004A		M_s4A =	0.26215 (mg/s)	
mass flux of ground water into SW-004A		M_g4A =	0.00016 (mg/s)	
mass flux of West Pit overflow		M_sms =	#N/A (mg/s)	
mass flux of liner leakage from Cat 1/2 stockpile		M_gC12 =	0.00000 (mg/s)	
mass flux of liner leakage from Cat 1/2 sumps		M_gC12s =	0.00000 (mg/s)	
mass flux of seepage from Overburden (Cat 1/2)		M_gO12 =	- (mg/s)	
mass flux of seepage from Overburden Pond - PW7		M_gOp7 =	#N/A (mg/s)	
mass flux of surface water into SW-005		M_s5 =	0.40886 (mg/s)	
mass flux of ground water into SW-005		M_g5 =	0.00026 (mg/s)	
mass flux of surface water into USGS Gage		M_s6 =	0.04392 (mg/s)	
mass flux of ground water into USGS Gage		M_g6 =	0.00005 (mg/s)	
mass flux of surface water into Colby Lake		M_scl =	0.26670 (mg/s)	
mass flux of ground water into Colby Lake		M_gcl =	0.00013 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP		M_shl =	0.00441 (mg/s)	
		Average Flow		
Mass balance at each node	mass flux in river at SW-001	M_r1 =	0.0593 (mg/s)	
	mass flux in river at SW-002	M_r2 =	0.1190 (mg/s)	
	mass flux in river at SW-003	M_r3 =	0.1365 (mg/s)	
	mass flux in river at SW-004	M_r4 =	0.2010 (mg/s)	
	mass flux in river at SW-004A	M_r4A =	0.4634 (mg/s)	
	mass flux in river at SW-005	M_r5 =	0.8725 (mg/s)	
	mass flux in river at USGS Gage	M_r6 =	0.9164 (mg/s)	
	mass flux into Colby Lake	M_cl =	1.1877 (mg/s)	
Convert mass flux to concentration			Average Flow	
	concentration in river at SW-001	C_r1 =	0.00037 (mg/L)	
	concentration in river at SW-002	C_r2 =	0.00037 (mg/L)	
	concentration in river at SW-003	C_r3 =	0.00037 (mg/L)	
	concentration in river at SW-004	C_r4 =	0.00037 (mg/L)	
	concentration in river at SW-004A	C_r4A =	0.00038 (mg/L)	
	concentration in river at SW-005	C_r5 =	0.00038 (mg/L)	
	concentration in river at USGS Gage	C_r6 =	0.00037 (mg/L)	
	concentration in Colby Lake	C_cl =	0.00038 (mg/L)	



Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case		Year 15	
Parameter		Vanadium	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0009 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0009 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0009 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0009 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0009 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0009 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0009 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0009 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0009 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0043 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0043 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0043 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0043 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0043 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0043 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0043 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0043 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0043 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.6497 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	2.3638 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	3.6241 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0722 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0293 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0017 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0014 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.6497 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	2.3638 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	3.6241 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0722 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0293 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0017 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0043 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0043 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0043 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	5.5797 (mg/L)
		Average Flow	
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	0.11513 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.02190 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.12169 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	0.13426 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.03679 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.03931 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.01308 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00324 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00092 (mg/s)
	mass flux of liner leakage from cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.14495 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.03815 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00092 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00001 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00374 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00093 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00120 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	0.58983 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.16872 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.15533 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.00249 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	0.91993 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.27624 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.09882 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.05719 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	0.60007 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.14238 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00993 (mg/s)
		Average Flow	
Mass balance at each node	mass flux in river at SW-001	M_r1 =	0.2587 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.4298 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.4863 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.6762 (mg/s)
	mass flux in river at SW-004A	M_r4A =	1.5926 (mg/s)
	mass flux in river at SW-005	M_r5 =	2.7688 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	2.9448 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	3.6972 (mg/s)
			Average Flow
	concentration in river at SW-001	C_r1 =	0.00160 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00135 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00133 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00126 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00129 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00120 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00120 (mg/L)
	concentration in Colby Lake	C_cl =	0.00117 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case		Year 15	
Parameter	Zinc		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0160 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0160 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0160 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0160 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0160 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0160 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0160 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0160 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0620 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0073 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0275 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0275 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0275 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0275 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0275 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0275 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0275 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0275 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0900 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	26.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	26.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	26.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	26.0000 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0046 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0030 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0900 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	26.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	26.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	26.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	26.0000 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0046 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0275 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0275 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0275 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	14.8000 (mg/L)
		Average Flow	
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	2.04684 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.14009 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.20744 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	2.38688 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.23529 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.69880 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.08364 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.03566 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00657 (mg/s)
	mass flux of liner leakage from cat 3 sumps to SW-003	M_gC3s_003 =	0.00001 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	2.57696 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.24401 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00657 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00376 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00559 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00987 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00003 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00001 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00002 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00244 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00001 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00002 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00318 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	10.48586 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	1.07901 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.02152 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.00533 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	16.35428 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	1.76663 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	1.75679 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.36578 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	10.66797 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.91055 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.68429 (mg/s)
		Average Flow	
Mass balance at each node	mass flux in river at SW-001	M_r1 =	2.3944 (mg/s)
	mass flux in river at SW-002	M_r2 =	5.0165 (mg/s)
	mass flux in river at SW-003	M_r3 =	5.8412 (mg/s)
	mass flux in river at SW-004	M_r4 =	8.6937 (mg/s)
	mass flux in river at SW-004A	M_r4A =	20.2854 (mg/s)
	mass flux in river at SW-005	M_r5 =	38.4063 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	40.5289 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	52.7917 (mg/s)
			Average Flow
	concentration in river at SW-001	C_r1 =	0.01484 (mg/L)
	concentration in river at SW-002	C_r2 =	0.01572 (mg/L)
	concentration in river at SW-003	C_r3 =	0.01597 (mg/L)
	concentration in river at SW-004	C_r4 =	0.01615 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.01643 (mg/L)
	concentration in river at SW-005	C_r5 =	0.01654 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.01658 (mg/L)
	concentration in Colby Lake	C_cl =	0.01673 (mg/L)

## Partridge River Mass-Balance--Mine Site-Proposed Action

### FLOWS

Case Flow	Year 15 High Flow Conditions			
Total flow in Partridge River	flow in river at SW-001	Q_r1_H =	85.35	(cfs)
	flow in river at SW-002	Q_r2_H =	172.44	(cfs)
	flow in river at SW-003	Q_r3_H =	227.89	(cfs)
	flow in river at SW-004	Q_r4_H =	283.28	(cfs)
	flow in river at SW-004A	Q_r4a_H =	916.49	(cfs)
	flow in river at SW-005	Q_r5_H =	1,082.62	(cfs)
	flow in river at USGS Gage	Q_r6_H =	1,084.14	(cfs)
	total flow into Colby Lake	Q_cl_H =	1,421.67	(cfs)
	flow check	Q_ck_H =	1,421.67	(cfs)
Input flow data	surface water flow into SW-001	Q_s1_H =	84.17	(cfs)
	surface water flow into SW-002	Q_s2_H =	86.78	(cfs)
	surface water flow into SW-003	Q_s3_H =	55.35	(cfs)
	surface water flow into SW-004	Q_s4_H =	54.98	(cfs)
	surface water flow into SW-004A	Q_s4a_H =	631.64	(cfs)
	surface water flow into SW-005	Q_s5_H =	163.86	(cfs)
	surface water flow into USGS Gage	Q_s6_H =	1.05	(cfs)
	surface water flow into Colby Lake	Q_scl_H =	335.97	(cfs)
	surface water inflow from Hoyt Lakes WWTP	Q_shl_H =	0.39	(cfs)
	surface water inflow from discharges upstream of PM-1	Q_sns_H =	1.00	(cfs)
	surface water flow from West Pit overflow	Q_sms_H =	-	(cfs)
	ground water flow into SW-001	Q_g1_H =	0.18	(cfs)
	ground water flow into SW-002	Q_g2_H =	0.30	(cfs)
	ground water flow into SW-003	Q_g3_H =	0.11	(cfs)
	ground water flow into SW-004	Q_g4_H =	0.31	(cfs)
	ground water flow into SW-004A	Q_g4a_H =	1.39	(cfs)
	ground water flow into SW-005	Q_g5_H =	2.27	(cfs)
	ground water flow into USGS Gage	Q_g6_H =	0.47	(cfs)
	ground water flow into Colby Lake	Q_gcl_H =	1.17	(cfs)
	ground water seepage from East Pit to SW-003	Q_gep_003_H =	-	(cfs)
	ground water seepage from East Pit to SW-004	Q_gep_004_H =	-	(cfs)
	ground water seepage from West Pit	Q_gwp_H =	-	(cfs)
	ground water liner leakage from Cat 1/2 stockpile	Q_gC12_H =	0.0225	(cfs)
	ground water liner leakage from Cat 3 stockpile to SW-003	Q_gC3_003_H =	0.0003	(cfs)
	ground water liner leakage from Cat 3 stockpile to SW-004	Q_gC3_004_H =	-	(cfs)
	ground water liner leakage from Cat 3LO stockpile to SW-003	Q_gC3LO_003_H =	0.0003	(cfs)
	ground water liner leakage from Cat 3LO stockpile to SW-004	Q_gC3LO_004_H =	0.0003	(cfs)
	ground water liner leakage from Cat 4 stockpile	Q_gC4_H =	0.0002	(cfs)
	ground water liner leakage from LO SP	Q_gC4LO_H =	0.0002	(cfs)
	ground water seepage from Overburden Storage	Q_gOS_H =	0.0765	(cfs)
	ground water seepage from Overburden (Cat 1/2)	Q_gO12_H =	0.1674	(cfs)
	ground water liner leakage from Cat 1/2 sumps	Q_gC12s_H =	0.0000	(cfs)
	ground water liner leakage from Cat 3 sumps	Q_gC3s_H =	0.0000	(cfs)
	ground water liner leakage from Cat 3LO sumps	Q_gC3LOs_H =	0.0000	(cfs)
	ground water liner leakage from Cat 4 sumps	Q_gC4s_H =	0.0000	(cfs)
	ground water liner leakage from LO SP sumps	Q_gC4LOs_H =	0.0000	(cfs)
	ground water seepage from Overburden pond - PW1	Q_gOp1_H =	0.0189	(cfs)
	ground water seepage from Overburden pond - PW7	Q_gOp7_H =	-	(cfs)
	ground water leakage from Haul Road pond - PW2	Q_gHRp2_H =	0.0000	(cfs)
	ground water leakage from Haul Road pond - PW4	Q_gHRp4_H =	0.0000	(cfs)
	ground water leakage from RTH pond - PW3	Q_gRTHp_H =	0.0000	(cfs)
	ground water liner leakage from WWTF pond	Q_gWTFp_H =	0.000008	(cfs)

Partridge River Mass-Balance--Mine Site-Proposed Action

Case Parameter	Year 15 Silver		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0001 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0001 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0001 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0001 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0001 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0001 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0001 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0001 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0001 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0001 (mg/L)
	concentration of West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0006 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0006 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0006 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0006 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0006 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0006 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0006 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0006 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	0.0007 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	0.0007 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0007 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0007 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.0007 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	- (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	0.0007 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C gC3s =	0.0007 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.0007 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0007 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0007 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	- (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0006 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0006 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0006 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	0.0031 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	0.23820 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.00280 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.00340 (mg/s)
	mass flux of surface water into SW-002	M s2 =	0.24560 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.00471 (mg/s)
	mass flux of surface water into SW-003	M s3 =	0.15663 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.00167 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M gC3_003 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	0.15558 (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.00488 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	- (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00000 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	1.78754 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.02158 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M gC12 =	0.00045 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	0.46372 (mg/s)
	mass flux of ground water into SW-005	M g5 =	0.03533 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	0.00296 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.00732 (mg/s)
mass flux of surface water into Colby Lake	M scl =	0.95080 (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	0.01821 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.00110 (mg/s)	
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M r1 =	0.2444 (mg/s)
	mass flux in river at SW-002	M r2 =	0.4947 (mg/s)
	mass flux in river at SW-003	M r3 =	0.6530 (mg/s)
	mass flux in river at SW-004	M r4 =	0.8135 (mg/s)
	mass flux in river at SW-004A	M r4A =	2.6231 (mg/s)
	mass flux in river at SW-005	M r5 =	3.1221 (mg/s)
	mass flux in river at USGS Gage	M r6 =	3.1324 (mg/s)
mass flux into Colby Lake	M cl =	4.1025 (mg/s)	
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C r1 =	0.00010 (mg/L)
	concentration in river at SW-002	C r2 =	0.00010 (mg/L)
	concentration in river at SW-003	C r3 =	0.00010 (mg/L)
	concentration in river at SW-004	C r4 =	0.00010 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00010 (mg/L)
	concentration in river at SW-005	C r5 =	0.00010 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00010 (mg/L)
	concentration in Colby Lake	C cl =	0.00011 (mg/L)

Partridge River Mass-Balance--Mine Site-Proposed Action

Case	Year 15		
Parameter	Aluminum		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0700 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0700 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0700 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0700 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0700 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0700 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0700 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0700 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0700 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0173 (mg/L)
	concentration of West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.1250 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.1250 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.1250 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.1250 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.1250 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.1250 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.1250 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.1250 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	1.6800 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	75.6941 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	83.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	83.0000 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	83.0000 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.4106 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	0.1400 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	1.6800 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C gC3s =	75.6941 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	83.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	83.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	83.0000 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.4106 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.1250 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.1250 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.1250 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	53.9000 (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M s1 =	166.74077 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.63675 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.48959 (mg/s)
	mass flux of surface water into SW-002	M s2 =	171.91695 (mg/s)
	mass flux of ground water into SW-002	M g2 =	1.06948 (mg/s)
	mass flux of surface water into SW-003	M s3 =	109.64335 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.38019 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M gC3_003 =	0.54096 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.59597 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M gC3s_003 =	0.00004 (mg/s)
	mass flux of surface water into SW-004	M s4 =	108.90593 (mg/s)
	mass flux of ground water into SW-004	M g4 =	1.10912 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.59597 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.35420 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.50468 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.88859 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00008 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00004 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00008 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.21972 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00005 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00010 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.01157 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	1,251.27494 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	4.90461 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M gC12 =	1.07123 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M gC12s =	0.00004 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M gO12 =	0.66310 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	324.60517 (mg/s)
	mass flux of ground water into SW-005	M g5 =	8.03013 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	2.07511 (mg/s)
mass flux of ground water into USGS Gage	M g6 =	1.66263 (mg/s)	
mass flux of surface water into Colby Lake	M scl =	665.55657 (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	4.13888 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.77259 (mg/s)	
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M r1 =	167.8671 (mg/s)
	mass flux in river at SW-002	M r2 =	340.8535 (mg/s)
	mass flux in river at SW-003	M r3 =	452.0140 (mg/s)
	mass flux in river at SW-004	M r4 =	564.6042 (mg/s)
	mass flux in river at SW-004A	M r4A =	1,822.5181 (mg/s)
	mass flux in river at SW-005	M r5 =	2,155.1534 (mg/s)
	mass flux in river at USGS Gage	M r6 =	2,158.8912 (mg/s)
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C r1 =	0.06950 (mg/L)
	concentration in river at SW-002	C r2 =	0.06985 (mg/L)
	concentration in river at SW-003	C r3 =	0.07009 (mg/L)
	concentration in river at SW-004	C r4 =	0.07043 (mg/L)
	concentration in river at SW-004A	C r4A =	0.07027 (mg/L)
	concentration in river at SW-005	C r5 =	0.07034 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.07037 (mg/L)
	concentration in Colby Lake	C cl =	0.07218 (mg/L)



Partridge River Mass-Balance--Mine Site-Proposed Action

Case	Year 15
Parameter	Arsenic

Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0021 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0021 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0021 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0021 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0021 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0021 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0021 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0021 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0021 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0065 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0022 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0022 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0022 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0022 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0022 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0022 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0022 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0022 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.7100 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.7100 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.7100 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.2713 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.1144 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0016 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0027 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.7100 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.7100 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.7100 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.2713 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.1144 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0016 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0022 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0022 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0022 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.7100 (mg/L)

Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	5.02604 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.01100 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.18395 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	5.18207 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.01848 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	3.30496 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00657 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00507 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00510 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	3.28274 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.01917 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00510 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00116 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00070 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00338 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00083 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00015 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	37.71700 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.08475 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.45272 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00002 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.01279 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	9.78453 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.13876 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.06255 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.02873 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	20.06178 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.07152 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.02329 (mg/s)

Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	5.2210 (mg/s)
	mass flux in river at SW-002	M_r2 =	10.4215 (mg/s)
	mass flux in river at SW-003	M_r3 =	13.7433 (mg/s)
	mass flux in river at SW-004	M_r4 =	17.0565 (mg/s)
	mass flux in river at SW-004A	M_r4A =	55.3237 (mg/s)
	mass flux in river at SW-005	M_r5 =	65.2470 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	65.3353 (mg/s)
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C_r1 =	0.00216 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00214 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00213 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00213 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00213 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00213 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00213 (mg/L)
	concentration in Colby Lake	C_cl =	0.00221 (mg/L)



Partridge River Mass-Balance--Mine Site-Proposed Action

Case		Year 15	
Parameter		Boron	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0450 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0450 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0450 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0450 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0450 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0450 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0450 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0450 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0450 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0960 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0870 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0870 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0870 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0870 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0870 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0870 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0870 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0870 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.7600 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.7600 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.7600 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.7600 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.7600 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0622 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0370 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.7600 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.7600 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.7600 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.7600 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.7600 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0622 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0870 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0870 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0870 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	1.0700 (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M_s1 =	107.19050 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.44318 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	2.71680 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	110.51804 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.74436 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	70.48501 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.26461 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00543 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00546 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	70.01095 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.77195 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00546 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00324 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00462 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.13461 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.03328 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00003 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00007 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00023 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	804.39104 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	3.41361 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.48460 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00002 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.17525 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	208.67475 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	5.58897 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	1.33400 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	1.15719 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	427.85780 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	2.88066 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.49667 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	110.3505 (mg/s)
	mass flux in river at SW-002	M_r2 =	221.6129 (mg/s)
	mass flux in river at SW-003	M_r3 =	292.3734 (mg/s)
	mass flux in river at SW-004	M_r4 =	363.3378 (mg/s)
	mass flux in river at SW-004A	M_r4A =	1.171.8023 (mg/s)
	mass flux in river at SW-005	M_r5 =	1.386.0661 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	1.388.5573 (mg/s)
	mass flux into Colby Lake	M_cl =	1.819.7924 (mg/s)
	High Flow		
	concentration in river at SW-001	C_r1 =	0.04569 (mg/L)
	concentration in river at SW-002	C_r2 =	0.04541 (mg/L)
	concentration in river at SW-003	C_r3 =	0.04533 (mg/L)
	concentration in river at SW-004	C_r4 =	0.04532 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.04518 (mg/L)
	concentration in river at SW-005	C_r5 =	0.04524 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.04526 (mg/L)
	concentration in Colby Lake	C_cl =	0.04658 (mg/L)

Partridge River Mass-Balance--Mine Site-Proposed Action

Case	Year 15			
Parameter	Barium			
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0077 (mg/L)	
	concentration of surface water into SW-002	C s2 =	0.0077 (mg/L)	
	concentration of surface water into SW-003	C s3 =	0.0077 (mg/L)	
	concentration of surface water into SW-004	C s4 =	0.0077 (mg/L)	
	concentration of surface water into SW-004A	C s4A =	0.0077 (mg/L)	
	concentration of surface water into SW-005	C s5 =	0.0077 (mg/L)	
	concentration of surface water into USGS Gage	C s6 =	0.0077 (mg/L)	
	concentration of surface water into Colby Lake	C scl =	0.0077 (mg/L)	
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0077 (mg/L)	
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0050 (mg/L)	
	concentration of West Pit overflow	C sms =	#N/A (mg/L)	
	concentration of ground water into SW-001	C g1 =	0.0219 (mg/L)	
	concentration of ground water into SW-002	C g2 =	0.0219 (mg/L)	
	concentration of ground water into SW-003	C g3 =	0.0219 (mg/L)	
	concentration of ground water into SW-004	C g4 =	0.0219 (mg/L)	
	concentration of ground water into SW-004A	C g4A =	0.0219 (mg/L)	
	concentration of ground water into SW-005	C g5 =	0.0219 (mg/L)	
	concentration of ground water into USGS Gage	C g6 =	0.0219 (mg/L)	
	concentration of ground water into Colby Lake	C gcl =	0.0219 (mg/L)	
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)	
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)	
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	0.1900 (mg/L)	
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	0.1900 (mg/L)	
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.1900 (mg/L)	
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.1900 (mg/L)	
	concentration of liner leakage from LOSP	C gC4LO =	0.1900 (mg/L)	
	concentration of seepage from Overburden (Storage)	C gOS =	0.0168 (mg/L)	
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	0.0140 (mg/L)	
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	0.1900 (mg/L)	
	concentration of liner leakage from Cat 3 sumps	C gC3s =	0.1900 (mg/L)	
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.1900 (mg/L)	
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.1900 (mg/L)	
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.1900 (mg/L)	
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0168 (mg/L)	
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)	
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0219 (mg/L)	
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0219 (mg/L)	
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0219 (mg/L)	
	concentration of liner leakage from WWTF ponc	C_gWTFp =	0.3000 (mg/L)	
	Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	18.29384 (mg/s)
		mass flux of ground water into SW-001	M g1 =	0.11166 (mg/s)
		mass flux of surface discharges from upstream of PM-1	M sns =	0.14150 (mg/s)
mass flux of surface water into SW-002		M s2 =	18.86175 (mg/s)	
mass flux of ground water into SW-002		M g2 =	0.18754 (mg/s)	
mass flux of surface water into SW-003		M s3 =	12.02944 (mg/s)	
mass flux of ground water into SW-003		M g3 =	0.06667 (mg/s)	
mass flux of seepage from East Pit to SW-003		M gep_003 =	#N/A (mg/s)	
mass flux of liner leakage from Cat 3 stockpile to SW-003		M gC3_003 =	0.00136 (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-003		M gC3LO_003 =	0.00136 (mg/s)	
mass flux of liner leakage from Cat 3 sumps to SW-003		M gC3s_003 =	0.00000 (mg/s)	
mass flux of surface water into SW-004		M s4 =	11.94854 (mg/s)	
mass flux of ground water into SW-004		M g4 =	0.19450 (mg/s)	
mass flux of seepage from East Pit to SW-004		M gep_004 =	#N/A (mg/s)	
mass flux of seepage from West Pit		M gwp =	#N/A (mg/s)	
mass flux of liner leakage from Cat 3 stockpile to SW-004		M gC3_004 =	- (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-004		M gC3LO_004 =	0.00136 (mg/s)	
mass flux of liner leakage from Cat 4 stockpile		M gC4 =	0.00081 (mg/s)	
mass flux of liner leakage from LOSP		M gC4LO =	0.00116 (mg/s)	
mass flux of seepage from Overburden (Storage)		M gOS =	0.03643 (mg/s)	
mass flux of liner leakage from Cat 3LO sumps to SW-004		M gC3LOs_004 =	0.00000 (mg/s)	
mass flux of liner leakage from Cat 4 sumps		M gC4s =	0.00000 (mg/s)	
mass flux of liner leakage from LOSP sumps		M gC4LOs =	0.00000 (mg/s)	
mass flux of seepage from Overburden Ponds - PW1		M gOp1 =	0.00901 (mg/s)	
mass flux of leakage from Haul Road Pond - PW2		M gHRp2 =	0.00001 (mg/s)	
mass flux of leakage from Haul Road Pond - PW4		M gHRp4 =	0.00002 (mg/s)	
mass flux of leakage from RTH Pond - PW3		M gRTHp =	0.00000 (mg/s)	
mass flux of liner leakage from WWTF pond		M gWTFp =	0.00006 (mg/s)	
mass flux of surface water into SW-004A		M s4A =	137.28274 (mg/s)	
mass flux of ground water into SW-004A		M g4A =	0.86007 (mg/s)	
mass flux of West Pit overflow		M sms =	#N/A (mg/s)	
mass flux of liner leakage from Cat 1/2 stockpile		M gC12 =	0.12115 (mg/s)	
mass flux of liner leakage from Cat 1/2 sumps		M gC12s =	0.00000 (mg/s)	
mass flux of seepage from Overburden (Cat 1/2)		M gO12 =	0.06631 (mg/s)	
mass flux of seepage from Overburden Pond - PW7		M gOp7 =	#N/A (mg/s)	
mass flux of surface water into SW-005		M s5 =	35.61382 (mg/s)	
mass flux of ground water into SW-005		M g5 =	1.40816 (mg/s)	
mass flux of surface water into USGS Gage		M s6 =	0.22767 (mg/s)	
mass flux of ground water into USGS Gage		M g6 =	0.29156 (mg/s)	
mass flux of surface water into Colby Lake		M scl =	73.02106 (mg/s)	
mass flux of ground water into Colby Lake		M gcl =	0.72579 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP		M shl =	0.08476 (mg/s)	
Mass balance at each node	mass flux in river at SW-001	M r1 =	18.5470 (mg/s)	
	mass flux in river at SW-002	M r2 =	37.5963 (mg/s)	
	mass flux in river at SW-003	M r3 =	49.6951 (mg/s)	
	mass flux in river at SW-004	M r4 =	61.8870 (mg/s)	
	mass flux in river at SW-004A	M r4A =	200.2173 (mg/s)	
	mass flux in river at SW-005	M r5 =	237.2393 (mg/s)	
	mass flux in river at USGS Gage	M r6 =	237.7565 (mg/s)	
	mass flux into Colby Lake	M cl =	311.5901 (mg/s)	
Convert mass flux to concentration	concentration in river at SW-001	C r1 =	0.00768 (mg/L)	
	concentration in river at SW-002	C r2 =	0.00770 (mg/L)	
	concentration in river at SW-003	C r3 =	0.00771 (mg/L)	
	concentration in river at SW-004	C r4 =	0.00772 (mg/L)	
	concentration in river at SW-004A	C r4A =	0.00772 (mg/L)	
	concentration in river at SW-005	C r5 =	0.00774 (mg/L)	
	concentration in river at USGS Gage	C r6 =	0.00775 (mg/L)	
	concentration in Colby Lake	C cl =	0.00812 (mg/L)	

Partridge River Mass-Balance--Mine Site-Proposed Action

Case		Year 15	
Parameter		Beryllium	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0001 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0001 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0001 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0001 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0001 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0001 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0001 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0001 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0001 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0001 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0001 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0001 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0001 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0001 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0001 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0001 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0001 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0001 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.0023 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0023 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0023 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0023 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	- (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.0023 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0023 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0023 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0023 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	- (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0001 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0001 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0001 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0027 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	0.23820 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00074 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.00283 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	0.24560 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.00124 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.15663 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00044 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00002 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00002 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.15558 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.00129 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00002 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00001 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	- (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00000 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	1.78754 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.00569 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.00013 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	0.46372 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.00931 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.00296 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.00193 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	0.95080 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.00480 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00110 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	0.2418 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.4886 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.6457 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.8026 (mg/s)
	mass flux in river at SW-004A	M_r4A =	2.5960 (mg/s)
	mass flux in river at SW-005	M_r5 =	3.0690 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	3.0739 (mg/s)
	mass flux into Colby Lake	M_cl =	4.0306 (mg/s)
	High Flow		
	concentration in river at SW-001	C_r1 =	0.00010 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00010 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00010 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00010 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00010 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00010 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00010 (mg/L)
	concentration in Colby Lake	C_cl =	0.00010 (mg/L)

Partridge River Mass-Balance--Mine Site-Proposed Action

Case	Year 15		
Parameter	Calcium		
Input concentration data	concentration of surface water into SW-001	C s1 =	17.0000 (mg/L)
	concentration of surface water into SW-002	C s2 =	17.0000 (mg/L)
	concentration of surface water into SW-003	C s3 =	17.0000 (mg/L)
	concentration of surface water into SW-004	C s4 =	17.0000 (mg/L)
	concentration of surface water into SW-004A	C s4A =	17.0000 (mg/L)
	concentration of surface water into SW-005	C s5 =	17.0000 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	17.0000 (mg/L)
	concentration of surface water into Colby Lake	C scl =	17.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	17.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	24.5000 (mg/L)
	concentration of West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	14.7900 (mg/L)
	concentration of ground water into SW-002	C g2 =	14.7900 (mg/L)
	concentration of ground water into SW-003	C g3 =	14.7900 (mg/L)
	concentration of ground water into SW-004	C g4 =	14.7900 (mg/L)
	concentration of ground water into SW-004A	C g4A =	14.7900 (mg/L)
	concentration of ground water into SW-005	C g5 =	14.7900 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	14.7900 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	14.7900 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	302.5160 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	480.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	480.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	480.0000 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	232.8964 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	9.3700 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	15.8000 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	302.5160 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C gC3s =	480.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	480.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	480.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	232.8964 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	9.3700 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	14.7900 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	14.7900 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	14.7900 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	622.0000 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	40,494.18700 (mg/s)
	mass flux of ground water into SW-001	M g1 =	75.34026 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	693.35000 (mg/s)
	mass flux of surface water into SW-002	M s2 =	41,751.26000 (mg/s)
	mass flux of ground water into SW-002	M g2 =	126.54143 (mg/s)
	mass flux of surface water into SW-003	M s3 =	26,627.67013 (mg/s)
	mass flux of ground water into SW-003	M g3 =	44.98349 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M gC3_003 =	3.43038 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	3.44657 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M gC3s_003 =	0.00025 (mg/s)
	mass flux of surface water into SW-004	M s4 =	26,448.58254 (mg/s)
	mass flux of ground water into SW-004	M g4 =	131.23090 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	3.44657 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	2.04839 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	1.41612 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	20.27794 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00047 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00022 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00021 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	5.01400 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00563 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.01206 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.13346 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	303,881.05772 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	580.31365 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M gC12 =	192.89457 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M gC12s =	0.00663 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M gO12 =	74.83577 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	78,832.68378 (mg/s)
	mass flux of ground water into SW-005	M g5 =	950.12439 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	503.95620 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	196.72179 (mg/s)
mass flux of surface water into Colby Lake	M scl =	161,635.16700 (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	489.71169 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	187.62900 (mg/s)	
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M r1 =	41,262.8773 (mg/s)
	mass flux in river at SW-002	M r2 =	83,140.6787 (mg/s)
	mass flux in river at SW-003	M r3 =	109,820.2095 (mg/s)
	mass flux in river at SW-004	M r4 =	136,432.3783 (mg/s)
	mass flux in river at SW-004A	M r4A =	441,161.4866 (mg/s)
	mass flux in river at SW-005	M r5 =	520,944.2948 (mg/s)
	mass flux in river at USGS Gage	M r6 =	521,644.9728 (mg/s)
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C r1 =	17.08321 (mg/L)
	concentration in river at SW-002	C r2 =	17.03731 (mg/L)
	concentration in river at SW-003	C r3 =	17.02822 (mg/L)
	concentration in river at SW-004	C r4 =	17.01853 (mg/L)
	concentration in river at SW-004A	C r4A =	17.00918 (mg/L)
	concentration in river at SW-005	C r5 =	17.00314 (mg/L)
	concentration in river at USGS Gage	C r6 =	17.00218 (mg/L)
	concentration in Colby Lake	C cl =	16.99948 (mg/L)

Partridge River Mass-Balance--Mine Site-Proposed Action

Case		Year 15	
Parameter		Cadmium	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0001 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0001 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0001 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0001 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0001 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0001 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0001 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0001 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0001 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0001 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0001 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0001 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0001 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0001 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0001 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0001 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0001 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0001 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.0149 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0149 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0149 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0149 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0001 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.0149 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0149 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0149 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0149 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0001 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0001 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0001 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0001 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0100 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	0.23820 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00051 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.00283 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	0.24560 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.00086 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.15663 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00030 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00011 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00011 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.15558 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.00089 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00011 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00006 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00009 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00013 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00003 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00000 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	1.78754 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.00392 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.00011 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	0.46372 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.00642 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.00296 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.00133 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	0.95080 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.00331 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00110 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	0.2415 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.4880 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.6451 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.8020 (mg/s)
	mass flux in river at SW-004A	M_r4A =	2.5936 (mg/s)
	mass flux in river at SW-005	M_r5 =	3.0638 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	3.0681 (mg/s)
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C_r1 =	0.00010 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00010 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00010 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00010 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00010 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00010 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00010 (mg/L)
	concentration in Colby Lake	C_cl =	0.00010 (mg/L)



Partridge River Mass-Balance--Mine Site-Proposed Action

Case Parameter	Year 15 Chloride		
Input concentration data	concentration of surface water into SW-001	C s1 =	8.0000 (mg/L)
	concentration of surface water into SW-002	C s2 =	8.0000 (mg/L)
	concentration of surface water into SW-003	C s3 =	8.0000 (mg/L)
	concentration of surface water into SW-004	C s4 =	8.0000 (mg/L)
	concentration of surface water into SW-004A	C s4A =	8.0000 (mg/L)
	concentration of surface water into SW-005	C s5 =	8.0000 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	8.0000 (mg/L)
	concentration of surface water into Colby Lake	C scl =	8.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	8.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	1.6000 (mg/L)
	concentration of West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	6.6000 (mg/L)
	concentration of ground water into SW-002	C g2 =	6.6000 (mg/L)
	concentration of ground water into SW-003	C g3 =	6.6000 (mg/L)
	concentration of ground water into SW-004	C g4 =	6.6000 (mg/L)
	concentration of ground water into SW-004A	C g4A =	6.6000 (mg/L)
	concentration of ground water into SW-005	C g5 =	6.6000 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	6.6000 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	6.6000 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	- (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	3.5548 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	9.8633 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.1586 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.1601 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	5.3500 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	2.3300 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	- (mg/L)
	concentration of liner leakage from Cat 3 sumps	C gC3s =	3.5548 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	9.8633 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.1586 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.1601 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	5.3500 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	6.6000 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	6.6000 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	6.6000 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	14.1000 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	19,056.08800 (mg/s)
	mass flux of ground water into SW-001	M g1 =	33.62040 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	45.28000 (mg/s)
	mass flux of surface water into SW-002	M s2 =	19,647.65177 (mg/s)
	mass flux of ground water into SW-002	M g2 =	56.46879 (mg/s)
	mass flux of surface water into SW-003	M s3 =	12,530.66830 (mg/s)
	mass flux of ground water into SW-003	M g3 =	20.07377 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M gC3_003 =	0.02540 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.07082 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	12,446.39179 (mg/s)
	mass flux of ground water into SW-004	M g4 =	58.56146 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.07082 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00068 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00097 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	11.57812 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	2.86285 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00251 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00538 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00303 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	143,002.85069 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	258.96350 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M gC12s =	- (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M gO12 =	11.03591 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	37,097.73354 (mg/s)
	mass flux of ground water into SW-005	M g5 =	423.99060 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	237.15586 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	87.78660 (mg/s)
mass flux of surface water into Colby Lake	M scl =	76,063.60800 (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	218.53260 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	88.29600 (mg/s)	
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M r1 =	19,134.9884 (mg/s)
	mass flux in river at SW-002	M r2 =	38,839.1090 (mg/s)
	mass flux in river at SW-003	M r3 =	51,389.9473 (mg/s)
	mass flux in river at SW-004	M r4 =	63,909.4249 (mg/s)
	mass flux in river at SW-004A	M r4A =	207,182.2750 (mg/s)
	mass flux in river at SW-005	M r5 =	244,703.9991 (mg/s)
	mass flux in river at USGS Gage	M r6 =	245,028.9416 (mg/s)
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C r1 =	7.92206 (mg/L)
	concentration in river at SW-002	C r2 =	7.95897 (mg/L)
	concentration in river at SW-003	C r3 =	7.96829 (mg/L)
	concentration in river at SW-004	C r4 =	7.97204 (mg/L)
	concentration in river at SW-004A	C r4A =	7.98801 (mg/L)
	concentration in river at SW-005	C r5 =	7.98691 (mg/L)
	concentration in river at USGS Gage	C r6 =	7.98632 (mg/L)
	concentration in Colby Lake	C cl =	7.92351 (mg/L)



# Partridge River Mass-Balance--Mine Site-Proposed Action

Case	Year 15
Parameter	Cobalt

Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0005 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0005 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0005 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0005 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0005 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0005 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0005 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0005 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0005 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0005 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0017 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0017 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0017 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0017 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0017 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0017 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0017 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0017 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0189 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	36.0519 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	44.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	19.4356 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	8.1982 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0011 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0013 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0189 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	36.0519 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	44.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	19.4356 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	8.1982 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0011 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0017 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0017 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0017 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	17.1000 (mg/L)

Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	1.19101 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00841 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.01415 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	1.22798 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.01412 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.78317 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00502 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.25765 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.31594 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00002 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.77790 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.01464 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.31594 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.08294 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.04985 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00240 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00004 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00001 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00001 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00059 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00367 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	8.93768 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.06474 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.01204 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.00616 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	2.31861 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.10600 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.01482 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.02195 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	4.75398 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.05463 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00552 (mg/s)

Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	1.2136 (mg/s)
	mass flux in river at SW-002	M_r2 =	2.4567 (mg/s)
	mass flux in river at SW-003	M_r3 =	3.8174 (mg/s)
	mass flux in river at SW-004	M_r4 =	5.0655 (mg/s)
	mass flux in river at SW-004A	M_r4A =	14.0861 (mg/s)
	mass flux in river at SW-005	M_r5 =	16.5107 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	16.5474 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	21.3616 (mg/s)
	High Flow		
	concentration in river at SW-001	C_r1 =	0.00050 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00050 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00059 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00063 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00054 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00054 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00054 (mg/L)
	concentration in Colby Lake	C_cl =	0.00071 (mg/L)

Partridge River Mass-Balance--Mine Site-Proposed Action

Case Parameter	Year 15 Copper		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0017 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0017 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0017 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0017 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0017 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0017 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0017 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0017 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0190 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0012 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0030 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0030 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0030 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0030 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0030 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0030 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0030 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0030 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0920 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	202.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	202.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	3.5080 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	1.4797 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0214 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0170 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0920 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	202.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_g3LOs =	202.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	3.5080 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	1.4797 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0214 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0030 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0030 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0030 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	27.0000 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	4.04942 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.01503 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.03509 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	4.17513 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.02524 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	2.66277 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00897 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	1.44362 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	1.45043 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00011 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	2.64486 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.02618 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	1.45043 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.01497 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00900 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.04640 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00020 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.01147 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00579 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	30.38811 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.11575 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.05866 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.08052 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	7.88327 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.18951 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.05040 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.03924 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	16.16352 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.09768 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.20970 (mg/s)
Mass balance at each node	mass flux in river at SW-001	M_r1 =	4.0995 (mg/s)
	mass flux in river at SW-002	M_r2 =	8.2999 (mg/s)
	mass flux in river at SW-003	M_r3 =	13.8658 (mg/s)
	mass flux in river at SW-004	M_r4 =	18.0752 (mg/s)
	mass flux in river at SW-004A	M_r4A =	48.7182 (mg/s)
	mass flux in river at SW-005	M_r5 =	56.7910 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	56.8807 (mg/s)
	mass flux into Colby Lake	M_cl =	73.3516 (mg/s)
Convert mass flux to concentration	concentration in river at SW-001	C_r1 =	0.00170 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00170 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00215 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00225 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00188 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00185 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00185 (mg/L)
	concentration in Colby Lake	C_cl =	0.00253 (mg/L)

Partridge River Mass-Balance--Mine Site-Proposed Action

Case		Year 15	
Parameter		Fluoride	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0700 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0700 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0700 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0700 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0700 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0700 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0700 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0700 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0700 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.1400 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.2800 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.2800 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.2800 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.2800 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.2800 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.2800 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.2800 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.2800 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0625 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.0622 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0622 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0622 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0626 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.2239 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.4200 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0625 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.0622 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0622 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0622 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0626 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.2239 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.2800 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.2800 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.2800 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	30.1000 (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M_s1 =	166.74077 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	1.42632 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	3.96200 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	171.91695 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	2.39565 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	109.64335 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.85161 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00044 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00045 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	108.90593 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	2.48443 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00045 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00027 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00038 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.48453 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.11981 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00011 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00023 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00646 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	1,251.27494 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	10.98633 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.03986 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	1.98931 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	324.60517 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	17.98748 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	2.07511 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	3.72428 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	665.55657 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	9.27108 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.77259 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	172.1291 (mg/s)
	mass flux in river at SW-002	M_r2 =	346.4417 (mg/s)
	mass flux in river at SW-003	M_r3 =	456.9375 (mg/s)
	mass flux in river at SW-004	M_r4 =	568.9401 (mg/s)
	mass flux in river at SW-004A	M_r4A =	1,833.2306 (mg/s)
	mass flux in river at SW-005	M_r5 =	2,175.8232 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	2,181.6226 (mg/s)
	mass flux into Colby Lake	M_cl =	2,857.2228 (mg/s)
	High Flow		
	concentration in river at SW-001	C_r1 =	0.07126 (mg/L)
	concentration in river at SW-002	C_r2 =	0.07099 (mg/L)
	concentration in river at SW-003	C_r3 =	0.07085 (mg/L)
	concentration in river at SW-004	C_r4 =	0.07097 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.07068 (mg/L)
	concentration in river at SW-005	C_r5 =	0.07102 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.07111 (mg/L)
	concentration in Colby Lake	C_cl =	0.07678 (mg/L)

Partridge River Mass-Balance--Mine Site-Proposed Action

Case		Year 15	
Parameter		Iron	
Input concentration data	concentration of surface water into SW-001	C_s1 =	1.6000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	1.6000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	1.6000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	1.6000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	1.6000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	1.6000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	1.6000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	1.6000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	1.6000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0300 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	2.8440 (mg/L)
	concentration of ground water into SW-002	C_g2 =	2.8440 (mg/L)
	concentration of ground water into SW-003	C_g3 =	2.8440 (mg/L)
	concentration of ground water into SW-004	C_g4 =	2.8440 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	2.8440 (mg/L)
	concentration of ground water into SW-005	C_g5 =	2.8440 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	2.8440 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	2.8440 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.8100 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	83.3211 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	127.2815 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	235.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	235.0000 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.2255 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.1500 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.8100 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	83.3211 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	127.2815 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	235.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	235.0000 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.2255 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	2.8440 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	2.8440 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	2.8440 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	106.0000 (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M_s1 =	3,811.21760 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	14.48734 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.84900 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	3,929.53035 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	24.33292 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	2,506.13366 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	8.64997 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.59546 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.91393 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00004 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	2,489.27836 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	25.23466 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.91393 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	1.00286 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	1.42891 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.48801 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00012 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00011 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00021 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.12067 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00108 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00232 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.02274 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	28,600.57014 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	111.58972 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.51648 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00002 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.71047 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	7,419.54671 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	182.70140 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	47.43117 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	37.82804 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	15,212.72160 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	94.16768 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	17,65920 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	3,826.5539 (mg/s)
	mass flux in river at SW-002	M_r2 =	7,760.4172 (mg/s)
	mass flux in river at SW-003	M_r3 =	10,296.7103 (mg/s)
	mass flux in river at SW-004	M_r4 =	12,815.2043 (mg/s)
	mass flux in river at SW-004A	M_r4A =	41,528.5911 (mg/s)
	mass flux in river at SW-005	M_r5 =	49,130.8392 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	49,216.0964 (mg/s)
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C_r1 =	1.58423 (mg/L)
	concentration in river at SW-002	C_r2 =	1.59437 (mg/L)
	concentration in river at SW-003	C_r3 =	1.59656 (mg/L)
	concentration in river at SW-004	C_r4 =	1.59856 (mg/L)
	concentration in river at SW-004A	C_r4A =	1.60115 (mg/L)
	concentration in river at SW-005	C_r5 =	1.60359 (mg/L)
	concentration in river at USGS Gage	C_r6 =	1.60412 (mg/L)
	concentration in Colby Lake	C_cl =	1.62914 (mg/L)

Partridge River Mass-Balance--Mine Site-Proposed Action

Case	Year 15		
Parameter	Hardness		
Input concentration data	concentration of surface water into SW-001	C_s1 =	110.0000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	110.0000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	110.0000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	110.0000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	110.0000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	110.0000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	110.0000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	110.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	110.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	110.0000 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	66.4200 (mg/L)
	concentration of ground water into SW-002	C_g2 =	66.4200 (mg/L)
	concentration of ground water into SW-003	C_g3 =	66.4200 (mg/L)
	concentration of ground water into SW-004	C_g4 =	66.4200 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	66.4200 (mg/L)
	concentration of ground water into SW-005	C_g5 =	66.4200 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	66.4200 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	66.4200 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	980.4055 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	4,390.8626 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	5,435.6906 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	3,773.4494 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	1,667.5681 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	43.5200 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	71.5000 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	980.4055 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	4,390.8626 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	5,435.6906 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	3,773.4494 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	1,667.5681 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	43.5200 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of seepage from Haul Road Pond - PW2	C_gHRp2 =	66.4200 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	66.4200 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	66.4200 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	4,083.0000 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	262,021.21000 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	338.34348 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	3,113.00000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	270,155.21179 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	568.28140 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	172,296.68909 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	202.01510 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	31.37985 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	39.03014 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00231 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	171,137.88704 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	589.34119 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	39.03014 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	16.10308 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	10.13957 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	94.18314 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00534 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00172 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00152 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	23.28806 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.02527 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.05414 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00002 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.87609 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	##### (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	2,606.11445 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	625.14007 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.02148 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	338.65554 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	510,093.83620 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	4,266.88722 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	3,260.89303 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	883.45242 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	##### (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	2,199.23262 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	1,214.07000 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	265,472.5535 (mg/s)
	mass flux in river at SW-002	M_r2 =	536,196.0467 (mg/s)
	mass flux in river at SW-003	M_r3 =	708,765.1632 (mg/s)
	mass flux in river at SW-004	M_r4 =	880,676.1018 (mg/s)
	mass flux in river at SW-004A	M_r4A =	2,850,535.2304 (mg/s)
	mass flux in river at SW-005	M_r5 =	3,364,895.9538 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	3,369,040.2992 (mg/s)
	mass flux into Colby Lake	M_cl =	4,418,328.2119 (mg/s)
	High Flow		
	concentration in river at SW-001	C_r1 =	109.90809 (mg/L)
	concentration in river at SW-002	C_r2 =	109.87810 (mg/L)
	concentration in river at SW-003	C_r3 =	109.89788 (mg/L)
	concentration in river at SW-004	C_r4 =	109.85523 (mg/L)
	concentration in river at SW-004A	C_r4A =	109.90370 (mg/L)
	concentration in river at SW-005	C_r5 =	109.82710 (mg/L)
	concentration in river at USGS Gage	C_r6 =	109.80845 (mg/L)
	concentration in Colby Lake	C_cl =	108.77476 (mg/L)



Partridge River Mass-Balance--Mine Site-Proposed Action

Case		Year 15	
Parameter		Potassium	
Input concentration data	concentration of surface water into SW-001	C_s1 =	1.3000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	1.3000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	1.3000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	1.3000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	1.3000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	1.3000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	1.3000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	1.3000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	1.3000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	2.7000 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	1.7500 (mg/L)
	concentration of ground water into SW-002	C_g2 =	1.7500 (mg/L)
	concentration of ground water into SW-003	C_g3 =	1.7500 (mg/L)
	concentration of ground water into SW-004	C_g4 =	1.7500 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	1.7500 (mg/L)
	concentration of ground water into SW-005	C_g5 =	1.7500 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	1.7500 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	1.7500 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	49.0000 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	38.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	38.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	38.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	38.0000 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	2.2600 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	4.4500 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	49.0000 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	38.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	38.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	38.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	38.0000 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	2.2600 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	1.7500 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	1.7500 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	1.7500 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	56.7000 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	3,096.61430 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	8.91450 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	76.41000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	3,192.74341 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	14.97279 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	2,036.23360 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	5.32259 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.27157 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.27285 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00002 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	2,022.53867 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	15.52766 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.27285 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.16216 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.23106 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	4.89094 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00004 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00002 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00003 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	1.20935 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00067 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00143 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.01217 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	23,237.96324 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	68.66456 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	31.24408 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00107 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	21.07716 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	6,028.38170 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	112.42175 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	38.53783 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	23.27675 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	12,360.33630 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	57.94425 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	14.34810 (mg/s)
Mass balance at each node	mass flux in river at SW-001	M_r1 =	3,181.9388 (mg/s)
	mass flux in river at SW-002	M_r2 =	6,389.6560 (mg/s)
	mass flux in river at SW-003	M_r3 =	8,431.7566 (mg/s)
	mass flux in river at SW-004	M_r4 =	10,478.6027 (mg/s)
	mass flux in river at SW-004A	M_r4A =	33,835.5528 (mg/s)
	mass flux in river at SW-005	M_r5 =	39,976.3563 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	40,038.1708 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	52,470.7995 (mg/s)
	concentration in river at SW-001	C_r1 =	1.31735 (mg/L)
	concentration in river at SW-002	C_r2 =	1.30938 (mg/L)
	concentration in river at SW-003	C_r3 =	1.30739 (mg/L)
	concentration in river at SW-004	C_r4 =	1.30685 (mg/L)
	concentration in river at SW-004A	C_r4A =	1.30455 (mg/L)
	concentration in river at SW-005	C_r5 =	1.30479 (mg/L)
	concentration in river at USGS Gage	C_r6 =	1.30498 (mg/L)
	concentration in Colby Lake	C_cl =	1.32701 (mg/L)



Partridge River Mass-Balance--Mine Site-Proposed Action

Case	Year 15			
Parameter	Magnesium			
Input concentration data	concentration of surface water into SW-001	C s1 =	8.0000 (mg/L)	
	concentration of surface water into SW-002	C s2 =	8.0000 (mg/L)	
	concentration of surface water into SW-003	C s3 =	8.0000 (mg/L)	
	concentration of surface water into SW-004	C s4 =	8.0000 (mg/L)	
	concentration of surface water into SW-004A	C s4A =	8.0000 (mg/L)	
	concentration of surface water into SW-005	C s5 =	8.0000 (mg/L)	
	concentration of surface water into USGS Gage	C s6 =	8.0000 (mg/L)	
	concentration of surface water into Colby Lake	C scl =	8.0000 (mg/L)	
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	8.0000 (mg/L)	
	concentration of surface water discharges from upstream of PM-1	C sns =	10.5000 (mg/L)	
	concentration of West Pit overflow	C sms =	#N/A (mg/L)	
	concentration of ground water into SW-001	C g1 =	8.0200 (mg/L)	
	concentration of ground water into SW-002	C g2 =	8.0200 (mg/L)	
	concentration of ground water into SW-003	C g3 =	8.0200 (mg/L)	
	concentration of ground water into SW-004	C g4 =	8.0200 (mg/L)	
	concentration of ground water into SW-004A	C g4A =	8.0200 (mg/L)	
	concentration of ground water into SW-005	C g5 =	8.0200 (mg/L)	
	concentration of ground water into USGS Gage	C g6 =	8.0200 (mg/L)	
	concentration of ground water into Colby Lake	C gcl =	8.0200 (mg/L)	
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)	
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)	
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	54.9183 (mg/L)	
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	776.1068 (mg/L)	
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	1,030.0000 (mg/L)	
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	626.0754 (mg/L)	
	concentration of liner leakage from LOSP	C gC4LO =	264.0873 (mg/L)	
	concentration of seepage from Overburden (Storage)	C gOS =	4.8800 (mg/L)	
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	9.0100 (mg/L)	
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	54.9183 (mg/L)	
	concentration of liner leakage from Cat 3 sumps	C gC3s =	776.1068 (mg/L)	
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	1,030.0000 (mg/L)	
	concentration of liner leakage from Cat 4 sumps	C gC4s =	626.0754 (mg/L)	
	concentration of liner leakage from LOSP sumps	C gC4LOs =	264.0873 (mg/L)	
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	4.8800 (mg/L)	
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)	
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	8.0200 (mg/L)	
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	8.0200 (mg/L)	
	concentration of leakage from RTH Pond - PW3	C gRTHp =	8.0200 (mg/L)	
	concentration of liner leakage from WWTF ponc	C_gWTFp =	615.0000 (mg/L)	
	Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	19,056.08800 (mg/s)
		mass flux of ground water into SW-001	M g1 =	40.85388 (mg/s)
		mass flux of surface discharges from upstream of PM-1	M sns =	297.15000 (mg/s)
mass flux of surface water into SW-002		M s2 =	19,647.65177 (mg/s)	
mass flux of ground water into SW-002		M g2 =	68.61814 (mg/s)	
mass flux of surface water into SW-003		M s3 =	12,530.66830 (mg/s)	
mass flux of ground water into SW-003		M g3 =	24.39267 (mg/s)	
mass flux of seepage from East Pit to SW-003		M gep_003 =	#N/A (mg/s)	
mass flux of liner leakage from Cat 3 stockpile to SW-003		M gC3_003 =	5.54654 (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-003		M gC3LO_003 =	7.39576 (mg/s)	
mass flux of liner leakage from Cat 3 sumps to SW-003		M gC3s_003 =	0.00041 (mg/s)	
mass flux of surface water into SW-004		M s4 =	12,446.39179 (mg/s)	
mass flux of ground water into SW-004		M g4 =	71.16104 (mg/s)	
mass flux of seepage from East Pit to SW-004		M gep_004 =	#N/A (mg/s)	
mass flux of seepage from West Pit		M gwp =	#N/A (mg/s)	
mass flux of liner leakage from Cat 3 stockpile to SW-004		M gC3_004 =	- (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-004		M gC3LO_004 =	7.39576 (mg/s)	
mass flux of liner leakage from Cat 4 stockpile		M gC4 =	2.67176 (mg/s)	
mass flux of liner leakage from LOSP		M gC4LO =	1.60577 (mg/s)	
mass flux of seepage from Overburden (Storage)		M gOS =	10.56098 (mg/s)	
mass flux of liner leakage from Cat 3LO sumps to SW-004		M gC3LOs_004 =	0.00101 (mg/s)	
mass flux of liner leakage from Cat 4 sumps		M gC4s =	0.00029 (mg/s)	
mass flux of liner leakage from LOSP sumps		M gC4LOs =	0.00024 (mg/s)	
mass flux of seepage from Overburden Ponds - PW1		M gOp1 =	2.61135 (mg/s)	
mass flux of leakage from Haul Road Pond - PW2		M gHRp2 =	0.00305 (mg/s)	
mass flux of leakage from Haul Road Pond - PW4		M gHRp4 =	0.00654 (mg/s)	
mass flux of leakage from RTH Pond - PW3		M gRTHp =	0.00000 (mg/s)	
mass flux of liner leakage from WWTF pond		M gWTFp =	0.13196 (mg/s)	
mass flux of surface water into SW-004A		M s4A =	143,002.85069 (mg/s)	
mass flux of ground water into SW-004A		M g4A =	314.67988 (mg/s)	
mass flux of West Pit overflow		M sms =	#N/A (mg/s)	
mass flux of liner leakage from Cat 1/2 stockpile		M gC12 =	35.01781 (mg/s)	
mass flux of liner leakage from Cat 1/2 sumps		M gC12s =	0.00120 (mg/s)	
mass flux of seepage from Overburden (Cat 1/2)		M gO12 =	42.67533 (mg/s)	
mass flux of seepage from Overburden Pond - PW7		M gOp7 =	#N/A (mg/s)	
mass flux of surface water into SW-005		M s5 =	37,097.73354 (mg/s)	
mass flux of ground water into SW-005		M g5 =	515.21282 (mg/s)	
mass flux of surface water into USGS Gage		M s6 =	237.15586 (mg/s)	
mass flux of ground water into USGS Gage		M g6 =	106.67402 (mg/s)	
mass flux of surface water into Colby Lake		M scl =	76,063.60800 (mg/s)	
mass flux of ground water into Colby Lake		M gcl =	265.55022 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP		M shl =	88.29600 (mg/s)	
Mass balance at each node	High Flow			
	mass flux in river at SW-001	M r1 =	19,394.0919 (mg/s)	
	mass flux in river at SW-002	M r2 =	39,110.3618 (mg/s)	
	mass flux in river at SW-003	M r3 =	51,678.3655 (mg/s)	
	mass flux in river at SW-004	M r4 =	64,220.9074 (mg/s)	
	mass flux in river at SW-004A	M r4A =	207,616.1323 (mg/s)	
	mass flux in river at SW-005	M r5 =	245,229.0787 (mg/s)	
	mass flux in river at USGS Gage	M r6 =	245,572.9086 (mg/s)	
mass flux into Colby Lake	M cl =	321,990.3628 (mg/s)		
Convert mass flux to concentration	High Flow			
	concentration in river at SW-001	C r1 =	8.02933 (mg/L)	
	concentration in river at SW-002	C r2 =	8.01455 (mg/L)	
	concentration in river at SW-003	C r3 =	8.01301 (mg/L)	
	concentration in river at SW-004	C r4 =	8.01089 (mg/L)	
	concentration in river at SW-004A	C r4A =	8.00474 (mg/L)	
	concentration in river at SW-005	C r5 =	8.00405 (mg/L)	
	concentration in river at USGS Gage	C r6 =	8.00405 (mg/L)	
concentration in Colby Lake	C cl =	8.02076 (mg/L)		

Partridge River Mass-Balance--Mine Site-Proposed Action

Case		Year 15	
Parameter	Manganese		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.1500 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.1500 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.1500 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.1500 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.1500 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.1500 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.1500 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.1500 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.1500 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0086 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.1240 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.1240 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.1240 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.1240 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.1240 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.1240 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.1240 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.1240 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.4120 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	47.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	47.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	43.9454 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	18.5368 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.1604 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.1160 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.4120 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	47.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	47.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	43.9454 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	18.5368 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.1604 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.1240 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.1240 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.1240 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	29.5000 (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M_s1 =	357.30165 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.63166 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.24338 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	368.39347 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	1.06093 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	234.95003 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.37714 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.33589 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.33748 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00002 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	233.36985 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	1.10025 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.33748 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.18754 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.11271 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.34711 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00005 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00002 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00002 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.08583 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00005 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00010 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00633 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	2.681.30345 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	4.86537 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.26270 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.54943 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	695.58250 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	7.96588 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	4.44667 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	1.64932 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	1.426.19265 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	4.10576 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	1.65555 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	358.1767 (mg/s)
	mass flux in river at SW-002	M_r2 =	727.6311 (mg/s)
	mass flux in river at SW-003	M_r3 =	963.6317 (mg/s)
	mass flux in river at SW-004	M_r4 =	1.199.1790 (mg/s)
	mass flux in river at SW-004A	M_r4A =	3.886.1589 (mg/s)
	mass flux in river at SW-005	M_r5 =	4.589.7063 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	4.595.8043 (mg/s)
	mass flux into Colby Lake	M_cl =	6.027.7563 (mg/s)
	High Flow		
	concentration in river at SW-001	C_r1 =	0.14829 (mg/L)
	concentration in river at SW-002	C_r2 =	0.14911 (mg/L)
	concentration in river at SW-003	C_r3 =	0.14942 (mg/L)
	concentration in river at SW-004	C_r4 =	0.14959 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.14983 (mg/L)
	concentration in river at SW-005	C_r5 =	0.14980 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.14979 (mg/L)
	concentration in Colby Lake	C_cl =	0.14879 (mg/L)

Partridge River Mass-Balance--Mine Site-Proposed Action

Case		Year 15	
Parameter		Sodium	
Input concentration data	concentration of surface water into SW-001	C_s1 =	2.5000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	2.5000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	2.5000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	2.5000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	2.5000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	2.5000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	2.5000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	2.5000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	2.5000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	4.8000 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	13.3300 (mg/L)
	concentration of ground water into SW-002	C_g2 =	13.3300 (mg/L)
	concentration of ground water into SW-003	C_g3 =	13.3300 (mg/L)
	concentration of ground water into SW-004	C_g4 =	13.3300 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	13.3300 (mg/L)
	concentration of ground water into SW-005	C_g5 =	13.3300 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	13.3300 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	13.3300 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	307.8723 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	338.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	338.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	236.5701 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	99.7885 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	4.6000 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	7.1900 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	307.8723 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	338.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	338.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	236.5701 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	99.7885 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	4.6000 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	13.3300 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	13.3300 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	13.3300 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	524.0000 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	5,955.02750 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	67.90302 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	135.84000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	6,139.89118 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	114.04985 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	3,915.83384 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	40.54293 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	2,41556 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	2,42696 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00018 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	3,889.49743 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	118.27639 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	2,42696 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	1,00956 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.60676 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	9.95502 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00033 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00011 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00009 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	2,46151 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00507 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.01087 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.11243 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	44,688.39084 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	523.02779 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	196.30995 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00675 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	34.05501 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	11,593.04173 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	856.33253 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	74.11121 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	177.30233 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	23,769.87750 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	441.36963 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	27.59250 (mg/s)
Mass balance at each node	mass flux in river at SW-001	M_r1 =	6,158.7705 (mg/s)
	mass flux in river at SW-002	M_r2 =	12,412.7115 (mg/s)
	mass flux in river at SW-003	M_r3 =	16,373.9310 (mg/s)
	mass flux in river at SW-004	M_r4 =	20,398.2937 (mg/s)
	mass flux in river at SW-004A	M_r4A =	65,840.0841 (mg/s)
	mass flux in river at SW-005	M_r5 =	78,289.4583 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	78,540.8719 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	102,779.7115 (mg/s)
	concentration in river at SW-001	C_r1 =	2.54979 (mg/L)
	concentration in river at SW-002	C_r2 =	2.54363 (mg/L)
	concentration in river at SW-003	C_r3 =	2.53887 (mg/L)
	concentration in river at SW-004	C_r4 =	2.54448 (mg/L)
	concentration in river at SW-004A	C_r4A =	2.53849 (mg/L)
	concentration in river at SW-005	C_r5 =	2.55530 (mg/L)
	concentration in river at USGS Gage	C_r6 =	2.55991 (mg/L)
	concentration in Colby Lake	C_cl =	2.87090 (mg/L)

Partridge River Mass-Balance--Mine Site-Proposed Action

Case Parameter	Year 15 Nickel		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0016 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0016 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0016 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0016 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0016 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0016 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0016 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0016 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0033 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0016 (mg/L)
	concentration of West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0163 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0163 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0163 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0163 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0163 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0163 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0163 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0163 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	0.1223 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	432.9053 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	661.3073 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	237.5109 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	100.1854 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0080 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	0.0190 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	0.1223 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C gC3s =	432.9053 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	661.3073 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	237.5109 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	100.1854 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0080 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0163 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0163 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0163 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	254.0000 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	3.71594 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.08293 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.04387 (mg/s)
	mass flux of surface water into SW-002	M s2 =	3.83129 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.13929 (mg/s)
	mass flux of surface water into SW-003	M s3 =	2.44348 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.04952 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M gC3_003 =	3.09381 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	4.74842 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M gC3s_003 =	0.00023 (mg/s)
	mass flux of surface water into SW-004	M s4 =	2.42705 (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.14445 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	4.74842 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	1.01357 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.60917 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.01725 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00065 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00011 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00009 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.00426 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00001 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00001 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.05450 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	27.88556 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.63878 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M gC12 =	0.07795 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M gO12 =	0.08999 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	7.23406 (mg/s)
	mass flux of ground water into SW-005	M g5 =	1.04584 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	0.04625 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.21654 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	14.83240 (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	0.53905 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.03642 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M r1 =	3.8427 (mg/s)
	mass flux in river at SW-002	M r2 =	7.8133 (mg/s)
	mass flux in river at SW-003	M r3 =	18.1488 (mg/s)
	mass flux in river at SW-004	M r4 =	27.1685 (mg/s)
	mass flux in river at SW-004A	M r4A =	55.8608 (mg/s)
	mass flux in river at SW-005	M r5 =	64.1407 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M r6 =	64.4035 (mg/s)
	mass flux into Colby Lake	M cl =	79.8114 (mg/s)
	High Flow		
	concentration in river at SW-001	C r1 =	0.00159 (mg/L)
	concentration in river at SW-002	C r2 =	0.00160 (mg/L)
	concentration in river at SW-003	C r3 =	0.00281 (mg/L)
	concentration in river at SW-004	C r4 =	0.00339 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00215 (mg/L)
	concentration in river at SW-005	C r5 =	0.00209 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00210 (mg/L)
	concentration in Colby Lake	C cl =	0.00445 (mg/L)

Partridge River Mass-Balance--Mine Site-Proposed Action

Case Parameter	Year 15 Lead			
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0005 (mg/L)	
	concentration of surface water into SW-002	C s2 =	0.0005 (mg/L)	
	concentration of surface water into SW-003	C s3 =	0.0005 (mg/L)	
	concentration of surface water into SW-004	C s4 =	0.0005 (mg/L)	
	concentration of surface water into SW-004A	C s4A =	0.0005 (mg/L)	
	concentration of surface water into SW-005	C s5 =	0.0005 (mg/L)	
	concentration of surface water into USGS Gage	C s6 =	0.0005 (mg/L)	
	concentration of surface water into Colby Lake	C scl =	0.0005 (mg/L)	
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0005 (mg/L)	
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0002 (mg/L)	
	concentration of West Pit overflow	C sms =	#N/A (mg/L)	
	concentration of ground water into SW-001	C g1 =	0.0011 (mg/L)	
	concentration of ground water into SW-002	C g2 =	0.0011 (mg/L)	
	concentration of ground water into SW-003	C g3 =	0.0011 (mg/L)	
	concentration of ground water into SW-004	C g4 =	0.0011 (mg/L)	
	concentration of ground water into SW-004A	C g4A =	0.0011 (mg/L)	
	concentration of ground water into SW-005	C g5 =	0.0011 (mg/L)	
	concentration of ground water into USGS Gage	C g6 =	0.0011 (mg/L)	
	concentration of ground water into Colby Lake	C gcl =	0.0011 (mg/L)	
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)	
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)	
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	0.0146 (mg/L)	
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	0.0528 (mg/L)	
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0528 (mg/L)	
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0528 (mg/L)	
	concentration of liner leakage from LOSP	C gC4LO =	0.0528 (mg/L)	
	concentration of seepage from Overburden (Storage)	C gOS =	0.0007 (mg/L)	
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	(mg/L)	
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	0.0146 (mg/L)	
	concentration of liner leakage from Cat 3 sumps	C gC3s =	0.0528 (mg/L)	
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.0528 (mg/L)	
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0528 (mg/L)	
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0528 (mg/L)	
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0007 (mg/L)	
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)	
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0011 (mg/L)	
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0011 (mg/L)	
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0011 (mg/L)	
	concentration of liner leakage from WWTF ponc	C_gWTFp =	0.0600 (mg/L)	
	Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	1.19101 (mg/s)
		mass flux of ground water into SW-001	M g1 =	0.00571 (mg/s)
mass flux of surface discharges from upstream of PM-1		M sns =	0.00425 (mg/s)	
mass flux of surface water into SW-002		M s2 =	1.22798 (mg/s)	
mass flux of ground water into SW-002		M g2 =	0.00958 (mg/s)	
mass flux of surface water into SW-003		M s3 =	0.78317 (mg/s)	
mass flux of ground water into SW-003		M g3 =	0.00341 (mg/s)	
mass flux of seepage from East Pit to SW-003		M gep_003 =	#N/A (mg/s)	
mass flux of liner leakage from Cat 3 stockpile to SW-003		M gC3_003 =	0.00038 (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-003		M gC3LO_003 =	0.00038 (mg/s)	
mass flux of liner leakage from Cat 3 sumps to SW-003		M gC3s_003 =	0.00000 (mg/s)	
mass flux of surface water into SW-004		M s4 =	0.77790 (mg/s)	
mass flux of ground water into SW-004		M g4 =	0.00994 (mg/s)	
mass flux of seepage from East Pit to SW-004		M gep_004 =	#N/A (mg/s)	
mass flux of seepage from West Pit		M gwp =	#N/A (mg/s)	
mass flux of liner leakage from Cat 3 stockpile to SW-004		M gC3_004 =	- (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-004		M gC3LO_004 =	0.00038 (mg/s)	
mass flux of liner leakage from Cat 4 stockpile		M gC4 =	0.00023 (mg/s)	
mass flux of liner leakage from LOSP		M gC4LO =	0.00032 (mg/s)	
mass flux of seepage from Overburden (Storage)		M gOS =	0.00146 (mg/s)	
mass flux of liner leakage from Cat 3LO sumps to SW-004		M gC3LOs_004 =	0.00000 (mg/s)	
mass flux of liner leakage from Cat 4 sumps		M gC4s =	0.00000 (mg/s)	
mass flux of liner leakage from LOSP sumps		M gC4LOs =	0.00000 (mg/s)	
mass flux of seepage from Overburden Ponds - PW1		M gOp1 =	0.00036 (mg/s)	
mass flux of leakage from Haul Road Pond - PW2		M gHRp2 =	0.00000 (mg/s)	
mass flux of leakage from Haul Road Pond - PW4		M gHRp4 =	0.00000 (mg/s)	
mass flux of leakage from RTH Pond - PW3		M gRTHp =	0.00000 (mg/s)	
mass flux of liner leakage from WWTF pond		M gWTFp =	0.00001 (mg/s)	
mass flux of surface water into SW-004A		M s4A =	8.93768 (mg/s)	
mass flux of ground water into SW-004A		M g4A =	0.04395 (mg/s)	
mass flux of West Pit overflow		M sms =	#N/A (mg/s)	
mass flux of liner leakage from Cat 1/2 stockpile		M gC12 =	0.00931 (mg/s)	
mass flux of liner leakage from Cat 1/2 sumps		M gC12s =	0.00000 (mg/s)	
mass flux of seepage from Overburden (Cat 1/2)		M gO12 =	- (mg/s)	
mass flux of seepage from Overburden Pond - PW7		M gOp7 =	#N/A (mg/s)	
mass flux of surface water into SW-005		M s5 =	2.31861 (mg/s)	
mass flux of ground water into SW-005		M g5 =	0.07195 (mg/s)	
mass flux of surface water into USGS Gage		M s6 =	0.01482 (mg/s)	
mass flux of ground water into USGS Gage		M g6 =	0.01490 (mg/s)	
mass flux of surface water into Colby Lake		M scl =	4.75398 (mg/s)	
mass flux of ground water into Colby Lake		M gcl =	0.03708 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP		M shl =	0.00552 (mg/s)	
Mass balance at each node			High Flow	
	mass flux in river at SW-001	M r1 =	1.2010 (mg/s)	
	mass flux in river at SW-002	M r2 =	2.4385 (mg/s)	
	mass flux in river at SW-003	M r3 =	3.2258 (mg/s)	
	mass flux in river at SW-004	M r4 =	4.0164 (mg/s)	
	mass flux in river at SW-004A	M r4A =	13.0074 (mg/s)	
	mass flux in river at SW-005	M r5 =	15.3979 (mg/s)	
Convert mass flux to concentration	mass flux in river at USGS Gage	M r6 =	15.4277 (mg/s)	
	mass flux into Colby Lake	M cl =	20.2242 (mg/s)	
				High Flow
	concentration in river at SW-001	C r1 =	0.00050 (mg/L)	
	concentration in river at SW-002	C r2 =	0.00050 (mg/L)	
	concentration in river at SW-003	C r3 =	0.00050 (mg/L)	
	concentration in river at SW-004	C r4 =	0.00050 (mg/L)	
concentration in river at SW-004A	C r4A =	0.00050 (mg/L)		
concentration in river at SW-005	C r5 =	0.00050 (mg/L)		
concentration in river at USGS Gage	C r6 =	0.00050 (mg/L)		
concentration in Colby Lake	C cl =	0.00052 (mg/L)		



Partridge River Mass-Balance--Mine Site-Proposed Action

Case		Year 15	
Parameter	Antimony		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0015 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0015 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0015 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0015 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0015 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0015 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0015 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0015 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0015 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0015 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0015 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0015 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0015 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0015 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0015 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0015 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0015 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0015 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0800 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.0800 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0800 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0800 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0420 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0003 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0004 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0800 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.0800 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0800 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0800 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0420 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0003 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0015 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0015 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0015 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.1238 (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M_s1 =	3.57302 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00764 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.04245 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	3.68393 (mg/s)
	mass flux of surface water into SW-002	M_g2 =	0.01283 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	2.34950 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00456 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00057 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00057 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	2.33370 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.01331 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00057 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00034 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00026 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00065 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00016 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00003 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	26.81303 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.05886 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.05101 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.00189 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	6.95583 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.09636 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.04447 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.01995 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	14.26193 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.04967 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.01656 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	3.6231 (mg/s)
	mass flux in river at SW-002	M_r2 =	7.3199 (mg/s)
	mass flux in river at SW-003	M_r3 =	9.6751 (mg/s)
	mass flux in river at SW-004	M_r4 =	12.0241 (mg/s)
	mass flux in river at SW-004A	M_r4A =	38.9489 (mg/s)
	mass flux in river at SW-005	M_r5 =	46.0011 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	46.0655 (mg/s)
	mass flux into Colby Lake	M_cl =	60.3937 (mg/s)
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C_r1 =	0.00150 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00150 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00150 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00150 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00150 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00150 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00150 (mg/L)
	concentration in Colby Lake	C_cl =	0.00151 (mg/L)



Partridge River Mass-Balance--Mine Site-Proposed Action

Case	Year 15			
Parameter	Selenium			
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0005 (mg/L)	
	concentration of surface water into SW-002	C s2 =	0.0005 (mg/L)	
	concentration of surface water into SW-003	C s3 =	0.0005 (mg/L)	
	concentration of surface water into SW-004	C s4 =	0.0005 (mg/L)	
	concentration of surface water into SW-004A	C s4A =	0.0005 (mg/L)	
	concentration of surface water into SW-005	C s5 =	0.0005 (mg/L)	
	concentration of surface water into USGS Gage	C s6 =	0.0005 (mg/L)	
	concentration of surface water into Colby Lake	C scl =	0.0005 (mg/L)	
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0005 (mg/L)	
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0005 (mg/L)	
	concentration of West Pit overflow	C sms =	#N/A (mg/L)	
	concentration of ground water into SW-001	C g1 =	0.0019 (mg/L)	
	concentration of ground water into SW-002	C g2 =	0.0019 (mg/L)	
	concentration of ground water into SW-003	C g3 =	0.0019 (mg/L)	
	concentration of ground water into SW-004	C g4 =	0.0019 (mg/L)	
	concentration of ground water into SW-004A	C g4A =	0.0019 (mg/L)	
	concentration of ground water into SW-005	C g5 =	0.0019 (mg/L)	
	concentration of ground water into USGS Gage	C g6 =	0.0019 (mg/L)	
	concentration of ground water into Colby Lake	C gcl =	0.0019 (mg/L)	
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)	
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)	
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	0.0029 (mg/L)	
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	0.0029 (mg/L)	
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0029 (mg/L)	
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0029 (mg/L)	
	concentration of liner leakage from LOSP	C gC4LO =	0.0029 (mg/L)	
	concentration of seepage from Overburden (Storage)	C gOS =	0.0004 (mg/L)	
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	0.0019 (mg/L)	
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	0.0029 (mg/L)	
	concentration of liner leakage from Cat 3 sumps	C gC3s =	0.0029 (mg/L)	
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.0029 (mg/L)	
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0029 (mg/L)	
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0029 (mg/L)	
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0004 (mg/L)	
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)	
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0019 (mg/L)	
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0019 (mg/L)	
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0019 (mg/L)	
	concentration of liner leakage from WWTF ponc	C_gWTFp =	0.0090 (mg/L)	
	Convert concentration to mass flux	High Flow		
		mass flux of surface water into SW-001	M s1 =	1.19101 (mg/s)
		mass flux of ground water into SW-001	M g1 =	0.00973 (mg/s)
		mass flux of surface discharges from upstream of PM-1	M sns =	0.01415 (mg/s)
mass flux of surface water into SW-002		M s2 =	1.22798 (mg/s)	
mass flux of ground water into SW-002		M g2 =	0.01634 (mg/s)	
mass flux of surface water into SW-003		M s3 =	0.78317 (mg/s)	
mass flux of ground water into SW-003		M g3 =	0.00581 (mg/s)	
mass flux of seepage from East Pit to SW-003		M gep_003 =	#N/A (mg/s)	
mass flux of liner leakage from Cat 3 stockpile to SW-003		M gC3_003 =	0.00002 (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-003		M gC3LO_003 =	0.00002 (mg/s)	
mass flux of liner leakage from Cat 3 sumps to SW-003		M gC3s_003 =	0.00000 (mg/s)	
mass flux of surface water into SW-004		M s4 =	0.77790 (mg/s)	
mass flux of ground water into SW-004		M g4 =	0.01695 (mg/s)	
mass flux of seepage from East Pit to SW-004		M gep_004 =	#N/A (mg/s)	
mass flux of seepage from West Pit		M gwp =	#N/A (mg/s)	
mass flux of liner leakage from Cat 3 stockpile to SW-004		M gC3_004 =	- (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-004		M gC3LO_004 =	0.00002 (mg/s)	
mass flux of liner leakage from Cat 4 stockpile		M gC4 =	0.00001 (mg/s)	
mass flux of liner leakage from LOSP		M gC4LO =	0.00002 (mg/s)	
mass flux of seepage from Overburden (Storage)		M gOS =	0.00096 (mg/s)	
mass flux of liner leakage from Cat 3LO sumps to SW-004		M gC3LOs_004 =	0.00000 (mg/s)	
mass flux of liner leakage from Cat 4 sumps		M gC4s =	0.00000 (mg/s)	
mass flux of liner leakage from LOSP sumps		M gC4LOs =	0.00000 (mg/s)	
mass flux of seepage from Overburden Ponds - PW1		M gOp1 =	0.00024 (mg/s)	
mass flux of leakage from Haul Road Pond - PW2		M gHRp2 =	0.00000 (mg/s)	
mass flux of leakage from Haul Road Pond - PW4		M gHRp4 =	0.00000 (mg/s)	
mass flux of leakage from RTH Pond - PW3		M gRTHp =	0.00000 (mg/s)	
mass flux of liner leakage from WWTF pond		M gWTFp =	0.00000 (mg/s)	
mass flux of surface water into SW-004A		M s4A =	8.93768 (mg/s)	
mass flux of ground water into SW-004A		M g4A =	0.07494 (mg/s)	
mass flux of West Pit overflow		M sms =	#N/A (mg/s)	
mass flux of liner leakage from Cat 1/2 stockpile		M gC12 =	0.00185 (mg/s)	
mass flux of liner leakage from Cat 1/2 sumps		M gC12s =	0.00000 (mg/s)	
mass flux of seepage from Overburden (Cat 1/2)		M gO12 =	0.00900 (mg/s)	
mass flux of seepage from Overburden Pond - PW7		M gOp7 =	#N/A (mg/s)	
mass flux of surface water into SW-005		M s5 =	2.31861 (mg/s)	
mass flux of ground water into SW-005		M g5 =	0.12270 (mg/s)	
mass flux of surface water into USGS Gage		M s6 =	0.01482 (mg/s)	
mass flux of ground water into USGS Gage		M g6 =	0.02540 (mg/s)	
mass flux of surface water into Colby Lake		M scl =	4.75398 (mg/s)	
mass flux of ground water into Colby Lake		M gcl =	0.06324 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP		M shl =	0.00552 (mg/s)	
Mass balance at each node	High Flow			
	mass flux in river at SW-001	M r1 =	1.2149 (mg/s)	
	mass flux in river at SW-002	M r2 =	2.4592 (mg/s)	
	mass flux in river at SW-003	M r3 =	3.2482 (mg/s)	
	mass flux in river at SW-004	M r4 =	4.0443 (mg/s)	
	mass flux in river at SW-004A	M r4A =	13.0678 (mg/s)	
	mass flux in river at SW-005	M r5 =	15.5091 (mg/s)	
	mass flux in river at USGS Gage	M r6 =	15.5493 (mg/s)	
	mass flux into Colby Lake	M cl =	20.3721 (mg/s)	
Convert mass flux to concentration	High Flow			
	concentration in river at SW-001	C r1 =	0.00050 (mg/L)	
	concentration in river at SW-002	C r2 =	0.00050 (mg/L)	
	concentration in river at SW-003	C r3 =	0.00050 (mg/L)	
	concentration in river at SW-004	C r4 =	0.00050 (mg/L)	
	concentration in river at SW-004A	C r4A =	0.00050 (mg/L)	
	concentration in river at SW-005	C r5 =	0.00051 (mg/L)	
	concentration in river at USGS Gage	C r6 =	0.00051 (mg/L)	
	concentration in Colby Lake	C cl =	0.00054 (mg/L)	

Partridge River Mass-Balance--Mine Site-Proposed Action

Case Parameter	Year 15 sulfate			
Input concentration data	concentration of surface water into SW-001	C s1 =	9.0000 (mg/L)	
	concentration of surface water into SW-002	C s2 =	9.0000 (mg/L)	
	concentration of surface water into SW-003	C s3 =	9.0000 (mg/L)	
	concentration of surface water into SW-004	C s4 =	9.0000 (mg/L)	
	concentration of surface water into SW-004A	C s4A =	9.0000 (mg/L)	
	concentration of surface water into SW-005	C s5 =	9.0000 (mg/L)	
	concentration of surface water into USGS Gage	C s6 =	9.0000 (mg/L)	
	concentration of surface water into Colby Lake	C scl =	9.0000 (mg/L)	
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	9.0000 (mg/L)	
	concentration of surface water discharges from upstream of PM-1	C sns =	22.0000 (mg/L)	
	concentration of West Pit overflow	C sms =	#N/A (mg/L)	
	concentration of ground water into SW-001	C g1 =	16.1300 (mg/L)	
	concentration of ground water into SW-002	C g2 =	16.1300 (mg/L)	
	concentration of ground water into SW-003	C g3 =	16.1300 (mg/L)	
	concentration of ground water into SW-004	C g4 =	16.1300 (mg/L)	
	concentration of ground water into SW-004A	C g4A =	16.1300 (mg/L)	
	concentration of ground water into SW-005	C g5 =	16.1300 (mg/L)	
	concentration of ground water into USGS Gage	C g6 =	16.1300 (mg/L)	
	concentration of ground water into Colby Lake	C gcl =	16.1300 (mg/L)	
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)	
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)	
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	680.6093 (mg/L)	
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	9,600.0000 (mg/L)	
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	9,600.0000 (mg/L)	
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	9,600.0000 (mg/L)	
	concentration of liner leakage from LOSP	C gC4LO =	9,600.0000 (mg/L)	
	concentration of seepage from Overburden (Storage)	C gOS =	35.1700 (mg/L)	
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	68.3000 (mg/L)	
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	680.6093 (mg/L)	
	concentration of liner leakage from Cat 3 sumps	C gC3s =	9,600.0000 (mg/L)	
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	9,600.0000 (mg/L)	
	concentration of liner leakage from Cat 4 sumps	C gC4s =	9,600.0000 (mg/L)	
	concentration of liner leakage from LOSP sumps	C gC4LOs =	9,600.0000 (mg/L)	
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	35.1700 (mg/L)	
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)	
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	16.1300 (mg/L)	
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	16.1300 (mg/L)	
	concentration of leakage from RTH Pond - PW3	C gRTHp =	16.1300 (mg/L)	
	concentration of liner leakage from WWTF ponc	C_gWTFp =	7,276.0000 (mg/L)	
	Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	21,438.09900 (mg/s)
		mass flux of ground water into SW-001	M g1 =	82.16622 (mg/s)
		mass flux of surface discharges from upstream of PM-1	M sns =	622.60000 (mg/s)
mass flux of surface water into SW-002		M s2 =	22,103.60824 (mg/s)	
mass flux of ground water into SW-002		M g2 =	138.00631 (mg/s)	
mass flux of surface water into SW-003		M s3 =	14,097.00183 (mg/s)	
mass flux of ground water into SW-003		M g3 =	49.05907 (mg/s)	
mass flux of seepage from East Pit to SW-003		M gep_003 =	#N/A (mg/s)	
mass flux of liner leakage from Cat 3 stockpile to SW-003		M gC3_003 =	68.60760 (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-003		M gC3LO_003 =	68.93132 (mg/s)	
mass flux of liner leakage from Cat 3 sumps to SW-003		M gC3s_003 =	0.00505 (mg/s)	
mass flux of surface water into SW-004		M s4 =	14,002.19076 (mg/s)	
mass flux of ground water into SW-004		M g4 =	143.12065 (mg/s)	
mass flux of seepage from East Pit to SW-004		M gep_004 =	#N/A (mg/s)	
mass flux of seepage from West Pit		M gwp =	#N/A (mg/s)	
mass flux of liner leakage from Cat 3 stockpile to SW-004		M gC3_004 =	- (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-004		M gC3LO_004 =	68.93132 (mg/s)	
mass flux of liner leakage from Cat 4 stockpile		M gC4 =	40.96772 (mg/s)	
mass flux of liner leakage from LOSP		M gC4LO =	58.37235 (mg/s)	
mass flux of seepage from Overburden (Storage)		M gOS =	76.11262 (mg/s)	
mass flux of liner leakage from Cat 3LO sumps to SW-004		M gC3LOs_004 =	0.00942 (mg/s)	
mass flux of liner leakage from Cat 4 sumps		M gC4s =	0.00438 (mg/s)	
mass flux of liner leakage from LOSP sumps		M gC4LOs =	0.00875 (mg/s)	
mass flux of seepage from Overburden Ponds - PW1		M gOp1 =	18.81988 (mg/s)	
mass flux of leakage from Haul Road Pond - PW2		M gHRp2 =	0.00614 (mg/s)	
mass flux of leakage from Haul Road Pond - PW4		M gHRp4 =	0.01315 (mg/s)	
mass flux of leakage from RTH Pond - PW3		M gRTHp =	0.00000 (mg/s)	
mass flux of liner leakage from WWTF pond		M gWTFp =	1.56122 (mg/s)	
mass flux of surface water into SW-004A		M s4A =	160,878.20703 (mg/s)	
mass flux of ground water into SW-004A		M g4A =	632.89109 (mg/s)	
mass flux of West Pit overflow		M sms =	#N/A (mg/s)	
mass flux of liner leakage from Cat 1/2 stockpile		M gC12 =	433.97980 (mg/s)	
mass flux of liner leakage from Cat 1/2 sumps		M gC12s =	0.01491 (mg/s)	
mass flux of seepage from Overburden (Cat 1/2)		M gO12 =	323.49893 (mg/s)	
mass flux of seepage from Overburden Pond - PW7		M gOp7 =	#N/A (mg/s)	
mass flux of surface water into SW-005		M s5 =	41,734.95023 (mg/s)	
mass flux of ground water into SW-005		M g5 =	1,036.20733 (mg/s)	
mass flux of surface water into USGS Gage		M s6 =	266.80034 (mg/s)	
mass flux of ground water into USGS Gage		M g6 =	214.54513 (mg/s)	
mass flux of surface water into Colby Lake		M scl =	85,571.55900 (mg/s)	
mass flux of ground water into Colby Lake		M gcl =	534.08043 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP		M shl =	99.33300 (mg/s)	
Mass balance at each node	High Flow			
	mass flux in river at SW-001	M r1 =	22,142.8652 (mg/s)	
	mass flux in river at SW-002	M r2 =	44,384.4798 (mg/s)	
	mass flux in river at SW-003	M r3 =	58,668.0846 (mg/s)	
	mass flux in river at SW-004	M r4 =	73,078.2080 (mg/s)	
	mass flux in river at SW-004A	M r4A =	235,346.7998 (mg/s)	
	mass flux in river at SW-005	M r5 =	278,117.9574 (mg/s)	
Convert mass flux to concentration	mass flux in river at USGS Gage	M r6 =	278,599.3028 (mg/s)	
	mass flux into Colby Lake	M cl =	364,804.2753 (mg/s)	
	High Flow			
	concentration in river at SW-001	C r1 =	9.16735 (mg/L)	
	concentration in river at SW-002	C r2 =	9.09533 (mg/L)	
	concentration in river at SW-003	C r3 =	9.09680 (mg/L)	
	concentration in river at SW-004	C r4 =	9.11575 (mg/L)	
	concentration in river at SW-004A	C r4A =	9.07390 (mg/L)	
	concentration in river at SW-005	C r5 =	9.07751 (mg/L)	
	concentration in river at USGS Gage	C r6 =	9.08050 (mg/L)	
	concentration in Colby Lake	C cl =	9.43191 (mg/L)	

Partridge River Mass-Balance--Mine Site-Proposed Action

Case		Year 15	
Parameter	Thallium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0004 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0004 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0004 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0004 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0004 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0004 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0004 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0004 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0004 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0003 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0000 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0000 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0000 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0000 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0000 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0000 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0000 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0000 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0000 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.0001 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0001 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0001 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0001 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0000 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0000 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.0001 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0001 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0001 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0001 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0000 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0000 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0000 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0000 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0041 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	0.95280 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00002 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.00809 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	0.98238 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.00003 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.62653 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00001 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.62232 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.00004 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00009 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00002 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00000 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	7.15014 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.00016 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	1.85489 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.00026 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.01186 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.00005 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	3.80318 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.00013 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00441 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	0.9609 (mg/s)
	mass flux in river at SW-002	M_r2 =	1.9433 (mg/s)
	mass flux in river at SW-003	M_r3 =	2.5699 (mg/s)
	mass flux in river at SW-004	M_r4 =	3.1923 (mg/s)
	mass flux in river at SW-004A	M_r4A =	10.3427 (mg/s)
	mass flux in river at SW-005	M_r5 =	12.1978 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	12.2097 (mg/s)
	mass flux into Colby Lake	M_cl =	16.0174 (mg/s)
	High Flow		
	concentration in river at SW-001	C_r1 =	0.00040 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00040 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00040 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00040 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00040 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00040 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00040 (mg/L)
	concentration in Colby Lake	C_cl =	0.00039 (mg/L)

Partridge River Mass-Balance--Mine Site-Proposed Action

Case		Year 15	
Parameter		Vanadium	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0009 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0009 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0009 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0009 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0009 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0009 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0009 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0009 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0009 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0043 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0043 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0043 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0043 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0043 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0043 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0043 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0043 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0043 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.4508 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	1.6411 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	2.5069 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0483 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0204 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0017 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0014 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.4508 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	1.6411 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	2.5069 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0483 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0204 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0017 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0043 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0043 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0043 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	5.5797 (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M_s1 =	2.14381 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.02190 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.12169 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	2.21036 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.03679 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	1.40970 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.01308 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.01173 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00	0.01800 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	1.40022 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.03815 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00	0.01800 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00021 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00012 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00374 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00093 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00120 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	16.08782 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.16872 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.28743 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.00663 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	4.17350 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.27624 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.02668 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.05719 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	8.55716 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.14238 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00993 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	2.2874 (mg/s)
	mass flux in river at SW-002	M_r2 =	4.5346 (mg/s)
	mass flux in river at SW-003	M_r3 =	5.9871 (mg/s)
	mass flux in river at SW-004	M_r4 =	7.4496 (mg/s)
	mass flux in river at SW-004A	M_r4A =	24.0003 (mg/s)
	mass flux in river at SW-005	M_r5 =	28.4500 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	28.5339 (mg/s)
	mass flux into Colby Lake	M_cl =	37.2433 (mg/s)
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C_r1 =	0.00095 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00093 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00093 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00093 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00093 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00093 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00093 (mg/L)
	concentration in Colby Lake	C_cl =	0.00108 (mg/L)

Partridge River Mass-Balance--Mine Site-Proposed Action

Case	Year 15		
Parameter	Zinc		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0160 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0160 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0160 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0160 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0160 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0160 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0160 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0160 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0620 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0073 (mg/L)
	concentration of West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0275 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0275 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0275 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0275 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0275 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0275 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0275 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0275 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	0.0900 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	23.3085 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	26.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	26.0000 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	26.0000 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0046 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	0.0030 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	0.0900 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C gC3s =	23.3085 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	26.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	26.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	26.0000 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0046 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0275 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0275 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0275 (mg/L)
	concentration of liner leakage from WWTF ponc	C gWTFp =	14.8000 (mg/L)
			High Flow
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	38.11218 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.14009 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.20744 (mg/s)
	mass flux of surface water into SW-002	M s2 =	39.29530 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.23529 (mg/s)
	mass flux of surface water into SW-003	M s3 =	25.06134 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.08364 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M gC3_003 =	0.16658 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.18669 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M gC3s_003 =	0.00001 (mg/s)
	mass flux of surface water into SW-004	M s4 =	24.89278 (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.24401 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M gC3_004 =	(mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.18669 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.11095 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.15809 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.00987 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00003 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00001 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00002 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.00244 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00001 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00002 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00318 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	286.00570 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	1.07901 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M gC12 =	0.05739 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M gO12 =	0.01421 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	74.19547 (mg/s)
	mass flux of ground water into SW-005	M g5 =	1.76663 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	0.47431 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.36578 (mg/s)
mass flux of surface water into Colby Lake	M scl =	152.12722 (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	0.91055 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.68429 (mg/s)	
			High Flow
Mass balance at each node	mass flux in river at SW-001	M r1 =	38.4597 (mg/s)
	mass flux in river at SW-002	M r2 =	77.9903 (mg/s)
	mass flux in river at SW-003	M r3 =	103.4885 (mg/s)
	mass flux in river at SW-004	M r4 =	129.0967 (mg/s)
	mass flux in river at SW-004A	M r4A =	416.2530 (mg/s)
	mass flux in river at SW-005	M r5 =	492.2151 (mg/s)
	mass flux in river at USGS Gage	M r6 =	493.0552 (mg/s)
mass flux into Colby Lake	M cl =	646.7772 (mg/s)	
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C r1 =	0.01592 (mg/L)
	concentration in river at SW-002	C r2 =	0.01598 (mg/L)
	concentration in river at SW-003	C r3 =	0.01605 (mg/L)
	concentration in river at SW-004	C r4 =	0.01610 (mg/L)
	concentration in river at SW-004A	C r4A =	0.01605 (mg/L)
	concentration in river at SW-005	C r5 =	0.01607 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.01607 (mg/L)
	concentration in Colby Lake	C cl =	0.01652 (mg/L)

***Appendix H.5***  
***Partridge River***  
***Proposed Action***  
***Year 20***



## Partridge River Mass-Balance Model - Mine Site - Proposed Action

### FLOWS

Case	Year 20		
Flows	Low Flow Conditions (no surface runoff)		
Total flow in Partridge River	flow in river at SW-001	Q_r1_L =	1.18 (cfs)
	flow in river at SW-002	Q_r2_L =	1.44 (cfs)
	flow in river at SW-003	Q_r3_L =	1.55 (cfs)
	flow in river at SW-004	Q_r4_L =	1.96 (cfs)
	flow in river at SW-004A	Q_r4a_L =	3.39 (cfs)
	flow in river at SW-005	Q_r5_L =	5.66 (cfs)
	flow in river at USGS Gage	Q_r6_L =	6.13 (cfs)
	total flow into Colby Lake	Q_cl_L =	7.69 (cfs)
	flow check	Q_ck_L =	7.69 (cfs)
Input flow data	surface water flow into SW-001	Q_s1_L =	- (cfs)
	surface water flow into SW-002	Q_s2_L =	- (cfs)
	surface water flow into SW-003	Q_s3_L =	- (cfs)
	surface water flow into SW-004	Q_s4_L =	- (cfs)
	surface water flow into SW-004A	Q_s4a_L =	- (cfs)
	surface water flow into SW-005	Q_s5_L =	- (cfs)
	surface water flow into USGS Gage	Q_s6_L =	- (cfs)
	surface water flow into Colby Lake	Q_scl_L =	- (cfs)
	surface water inflow from Hoyt Lakes WWTP	Q_shl_L =	0.39 (cfs)
	surface water inflow from discharges upstream of PM-1	Q_sns_L =	1.00 (cfs)
	West Pit overflow	Q_sms_L =	- (cfs)
	ground water flow into SW-001	Q_g1_L =	0.18 (cfs)
	ground water flow into SW-002	Q_g2_L =	0.26 (cfs)
	ground water flow into SW-003	Q_g3_L =	0.10 (cfs)
	ground water flow into SW-004	Q_g4_L =	0.30 (cfs)
	ground water flow into SW-004A	Q_g4a_L =	1.38 (cfs)
	ground water flow into SW-005	Q_g5_L =	2.27 (cfs)
	ground water flow into USGS Gage	Q_g6_L =	0.47 (cfs)
	ground water flow into Colby Lake	Q_gcl_L =	1.17 (cfs)
	ground water seepage from East Pit to SW-003	Q_gep_003_L =	0.0112 (cfs)
	ground water seepage from East Pit to SW-004	Q_gep_004_L =	0.0112 (cfs)
	ground water seepage from West Pit	Q_gwp_L =	- (cfs)
	ground water liner leakage from Cat 1/2 stockpile	Q_gC12_L =	0.0061 (cfs)
	ground water liner leakage from Cat 3 stockpile to SW-003	Q_gC3_003_L =	0.0000 (cfs)
	ground water liner leakage from Cat 3 stockpile to SW-004	Q_gC3_004_L =	- (cfs)
	ground water liner leakage from Cat 3LO stockpile to SW-003	Q_gC3LO_003_L =	0.0000 (cfs)
	ground water liner leakage from Cat 3LO stockpile to SW-004	Q_gC3LO_004_L =	0.0000 (cfs)
	ground water liner leakage from Cat 4 stockpile	Q_gC4_L =	0.0000 (cfs)
	ground water liner leakage from LO SP	Q_gC4LO_L =	0.0000 (cfs)
	ground water seepage from Overburden Storage	Q_gOS_L =	0.0765 (cfs)
	ground water seepage from Overburden (Cat 1/2)	Q_gO12_L =	0.0457 (cfs)
	ground water liner leakage from Cat 1/2 sumps	Q_gC12s_L =	0.0000 (cfs)
	ground water liner leakage from Cat 3 sumps	Q_gC3s_L =	0.0000 (cfs)
	ground water liner leakage from Cat 3LO sumps	Q_gC3LOs_L =	0.0000 (cfs)
	ground water liner leakage from Cat 4 sumps	Q_gC4s_L =	0.0000 (cfs)
	ground water liner leakage from LO SP sumps	Q_gC4LOs_L =	0.0000 (cfs)
	ground water seepage from Overburden pond - PW1	Q_gOp1_L =	0.0189 (cfs)
	ground water seepage from Overburden pond - PW7	Q_gOp7_L =	- (cfs)
	ground water leakage from Haul Road pond - PW2	Q_gHRp2_L =	0.0000 (cfs)
	ground water leakage from Haul Road pond - PW4	Q_gHRp4_L =	0.0000 (cfs)
	ground water leakage from RTH pond - PW3	Q_gRTHp_L =	0.0000 (cfs)
	ground water liner leakage from WWTF pond	Q_gWTFp_L =	0.000002 (cfs)

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case	Year 20			
Parameter	Silver			
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0001 (mg/L)	
	concentration of surface water into SW-002	C s2 =	0.0001 (mg/L)	
	concentration of surface water into SW-003	C s3 =	0.0001 (mg/L)	
	concentration of surface water into SW-004	C s4 =	0.0001 (mg/L)	
	concentration of surface water into SW-004A	C s4A =	0.0001 (mg/L)	
	concentration of surface water into SW-005	C s5 =	0.0001 (mg/L)	
	concentration of surface water into USGS Gage	C s6 =	0.0001 (mg/L)	
	concentration of surface water into Colby Lake	C scl =	0.0001 (mg/L)	
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0001 (mg/L)	
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0001 (mg/L)	
	concentration of West Pit overflow	C sms =	#N/A (mg/L)	
	concentration of ground water into SW-001	C g1 =	0.0006 (mg/L)	
	concentration of ground water into SW-002	C g2 =	0.0006 (mg/L)	
	concentration of ground water into SW-003	C g3 =	0.0006 (mg/L)	
	concentration of ground water into SW-004	C g4 =	0.0006 (mg/L)	
	concentration of ground water into SW-004A	C g4A =	0.0006 (mg/L)	
	concentration of ground water into SW-005	C g5 =	0.0006 (mg/L)	
	concentration of ground water into USGS Gage	C g6 =	0.0006 (mg/L)	
	concentration of ground water into Colby Lake	C gcl =	0.0006 (mg/L)	
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)	
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)	
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	0.0007 (mg/L)	
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	0.0007 (mg/L)	
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0007 (mg/L)	
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0007 (mg/L)	
	concentration of liner leakage from LOSP	C gC4LO =	0.0007 (mg/L)	
	concentration of seepage from Overburden (Storage)	C gOS =	- (mg/L)	
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	- (mg/L)	
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	0.0007 (mg/L)	
	concentration of liner leakage from Cat 3 sumps	C gC3s =	0.0007 (mg/L)	
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.0007 (mg/L)	
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0007 (mg/L)	
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0007 (mg/L)	
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	- (mg/L)	
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)	
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0006 (mg/L)	
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0006 (mg/L)	
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0006 (mg/L)	
	concentration of liner leakage from WWTF pond	C gWTFp =	0.0053 (mg/L)	
	Convert concentration to mass flux	Low Flow		
		mass flux of surface water into SW-001	M s1 =	- (mg/s)
		mass flux of ground water into SW-001	M g1 =	0.00280 (mg/s)
		mass flux of surface discharges from upstream of PM-1	M sns =	0.00340 (mg/s)
		mass flux of surface water into SW-002	M s2 =	- (mg/s)
mass flux of ground water into SW-002		M g2 =	0.00401 (mg/s)	
mass flux of surface water into SW-003		M s3 =	- (mg/s)	
mass flux of ground water into SW-003		M g3 =	0.00158 (mg/s)	
mass flux of seepage from East Pit to SW-003		M gep 003 =	#N/A (mg/s)	
mass flux of liner leakage from Cat 3 stockpile to SW-003		M gC3 003 =	0.00000 (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-003		M gC3LO 003 =	0.00000 (mg/s)	
mass flux of liner leakage from Cat 3 sumps to SW-003		M gC3s 003 =	0.00000 (mg/s)	
mass flux of surface water into SW-004		M s4 =	- (mg/s)	
mass flux of ground water into SW-004		M g4 =	0.00473 (mg/s)	
mass flux of seepage from East Pit to SW-004		M gep 004 =	#N/A (mg/s)	
mass flux of seepage from West Pit		M gwp =	#N/A (mg/s)	
mass flux of liner leakage from Cat 3 stockpile to SW-004		M gC3 004 =	- (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-004		M gC3LO 004 =	0.00000 (mg/s)	
mass flux of liner leakage from Cat 4 stockpile		M gC4 =	0.00000 (mg/s)	
mass flux of liner leakage from LOSP		M gC4LO =	0.00000 (mg/s)	
mass flux of seepage from Overburden (Storage)		M gOS =	- (mg/s)	
mass flux of liner leakage from Cat 3LO sumps to SW-004		M gC3LOs 004 =	0.00000 (mg/s)	
mass flux of liner leakage from Cat 4 sumps		M gC4s =	0.00000 (mg/s)	
mass flux of liner leakage from LOSP sumps		M gC4LOs =	0.00000 (mg/s)	
mass flux of seepage from Overburden Ponds - PW1		M gOp1 =	- (mg/s)	
mass flux of leakage from Haul Road Pond - PW2		M gHRp2 =	0.00000 (mg/s)	
mass flux of leakage from Haul Road Pond - PW4		M gHRp4 =	0.00000 (mg/s)	
mass flux of leakage from RTH Pond - PW3		M gRTHp =	0.00000 (mg/s)	
mass flux of liner leakage from WWTF pond		M gWTFp =	0.00000 (mg/s)	
mass flux of surface water into SW-004A		M s4A =	- (mg/s)	
mass flux of ground water into SW-004A		M g4A =	0.002150 (mg/s)	
mass flux of West Pit overflow		M sms =	#N/A (mg/s)	
mass flux of liner leakage from Cat 1/2 stockpile		M gC12 =	0.00012 (mg/s)	
mass flux of liner leakage from Cat 1/2 sumps		M gC12s =	0.00000 (mg/s)	
mass flux of seepage from Overburden (Cat 1/2)		M gO12 =	- (mg/s)	
mass flux of seepage from Overburden Pond - PW7		M gOp7 =	#N/A (mg/s)	
mass flux of surface water into SW-005		M s5 =	- (mg/s)	
mass flux of ground water into SW-005		M g5 =	0.03533 (mg/s)	
mass flux of surface water into USGS Gage		M s6 =	- (mg/s)	
mass flux of ground water into USGS Gage		M g6 =	0.00732 (mg/s)	
mass flux of surface water into Colby Lake		M scl =	- (mg/s)	
mass flux of ground water into Colby Lake		M gcl =	0.01821 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP		M shl =	0.00110 (mg/s)	
Mass balance at each node	Low Flow			
	mass flux in river at SW-001	M r1 =	0.0062 (mg/s)	
	mass flux in river at SW-002	M r2 =	0.0102 (mg/s)	
	mass flux in river at SW-003	M r3 =	0.0118 (mg/s)	
	mass flux in river at SW-004	M r4 =	0.0165 (mg/s)	
	mass flux in river at SW-004A	M r4A =	0.0381 (mg/s)	
	mass flux in river at SW-005	M r5 =	0.0735 (mg/s)	
Convert mass flux to concentration	mass flux in river at USGS Gage	M r6 =	0.0808 (mg/s)	
	mass flux into Colby Lake	M cl =	0.1001 (mg/s)	
	Low Flow			
Convert mass flux to concentration	concentration in river at SW-001	C r1 =	0.00019 (mg/L)	
	concentration in river at SW-002	C r2 =	0.00025 (mg/L)	
	concentration in river at SW-003	C r3 =	0.00027 (mg/L)	
	concentration in river at SW-004	C r4 =	0.00030 (mg/L)	
	concentration in river at SW-004A	C r4A =	0.00040 (mg/L)	
	concentration in river at SW-005	C r5 =	0.00046 (mg/L)	
	concentration in river at USGS Gage	C r6 =	0.00047 (mg/L)	
concentration in Colby Lake	C cl =	0.00015 (mg/L)		

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case		Year 20	
Parameter		Aluminum	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0700 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0700 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0700 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0700 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0700 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0700 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0700 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0700 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0700 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0173 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.1250 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.1250 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.1250 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.1250 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.1250 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.1250 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.1250 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.1250 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	1.6800 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	83.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	83.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	83.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	83.0000 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.4106 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.1400 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	1.6800 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	83.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	83.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	83.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	83.0000 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.4106 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.1250 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.1250 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.1250 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	33.9000 (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.63675 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.48959 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.91193 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.35995 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.03472 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00726 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00004 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	1.07480 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00726 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00069 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.01092 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.88859 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00008 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00004 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00008 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.21972 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00005 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00010 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00235 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	4.88584 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.29239 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00004 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.18099 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	8.03013 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	1.66263 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	4.13888 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.77259 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	1.1263 (mg/s)
	mass flux in river at SW-002	M_r2 =	2.0383 (mg/s)
	mass flux in river at SW-003	M_r3 =	2.4402 (mg/s)
	mass flux in river at SW-004	M_r4 =	4.8450 (mg/s)
	mass flux in river at SW-004A	M_r4A =	10.0042 (mg/s)
	mass flux in river at SW-005	M_r5 =	18.0343 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	19.8970 (mg/s)
	mass flux into Colby Lake	M_cl =	24.6084 (mg/s)
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C_r1 =	0.03373 (mg/L)
	concentration in river at SW-002	C_r2 =	0.05009 (mg/L)
	concentration in river at SW-003	C_r3 =	0.05561 (mg/L)
	concentration in river at SW-004	C_r4 =	0.08369 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.10415 (mg/L)
	concentration in river at SW-005	C_r5 =	0.11251 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.11346 (mg/L)
	concentration in Colby Lake	C_cl =	0.07625 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case Parameter	Year 20 Arsenic		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0021 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0021 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0021 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0021 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0021 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0021 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0021 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0021 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0021 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0065 (mg/L)
	concentration of West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0022 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0022 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0022 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0022 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0022 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0022 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0022 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0022 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	0.7100 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	0.7100 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.7100 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.7100 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.2285 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0016 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	0.0027 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	0.7100 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C gC3s =	0.7100 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.7100 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.7100 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.2285 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0016 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0022 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0022 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0022 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	0.5600 (mg/L)
		Low Flow	
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	(mg/s)
	mass flux of ground water into SW-001	M g1 =	0.01100 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.18395 (mg/s)
	mass flux of surface water into SW-002	M s2 =	(mg/s)
	mass flux of ground water into SW-002	M g2 =	0.01576 (mg/s)
	mass flux of surface water into SW-003	M s3 =	(mg/s)
	mass flux of ground water into SW-003	M g3 =	0.00622 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep 003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M gC3 003 =	0.00030 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO 00 =	0.00006 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M gC3s 003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	(mg/s)
	mass flux of ground water into SW-004	M g4 =	0.01857 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep 004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M gC3 004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO 00 =	0.00006 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00001 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00003 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.00338 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs 0 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.00083 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00004 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.08443 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M gC12 =	0.12357 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M gC12s =	0.00002 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M gO12 =	0.00349 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	- (mg/s)
	mass flux of ground water into SW-005	M g5 =	0.13876 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.02873 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	0.07152 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.02329 (mg/s)
		Low Flow	
Mass balance at each node	mass flux in river at SW-001	M r1 =	0.1950 (mg/s)
	mass flux in river at SW-002	M r2 =	0.2107 (mg/s)
	mass flux in river at SW-003	M r3 =	0.2173 (mg/s)
	mass flux in river at SW-004	M r4 =	0.2402 (mg/s)
	mass flux in river at SW-004A	M r4A =	0.4517 (mg/s)
	mass flux in river at SW-005	M r5 =	0.5905 (mg/s)
	mass flux in river at USGS Gage	M r6 =	0.6192 (mg/s)
	mass flux into Colby Lake	M cl =	0.7140 (mg/s)
Convert mass flux to concentration	concentration in river at SW-001	C r1 =	0.00584 (mg/L)
	concentration in river at SW-002	C r2 =	0.00518 (mg/L)
	concentration in river at SW-003	C r3 =	0.00495 (mg/L)
	concentration in river at SW-004	C r4 =	0.00433 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00470 (mg/L)
	concentration in river at SW-005	C r5 =	0.00368 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00357 (mg/L)
		concentration in Colby Lake	C cl =

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case		Year 20	
Parameter		Boron	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0450 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0450 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0450 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0450 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0450 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0450 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0450 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0450 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0450 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0960 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0870 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0870 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0870 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0870 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0870 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0870 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0870 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0870 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.7600 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.7600 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.7600 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.7600 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.7600 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0622 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0370 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.7600 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.7600 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.7600 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.7600 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.7600 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0622 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0870 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0870 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0870 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	1.1000 (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.44318 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	2.71680 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.63470 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.25053 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00032 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00007 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.74806 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00007 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00001 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00010 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.13461 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.03328 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00003 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00007 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00008 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	3.40055 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.13227 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00002 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.04783 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	5.58897 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of surface water into USGS Gage	M_g6 =	1.15719 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	2.88066 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.49667 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	3.1600 (mg/s)
	mass flux in river at SW-002	M_r2 =	3.7947 (mg/s)
	mass flux in river at SW-003	M_r3 =	4.0456 (mg/s)
	mass flux in river at SW-004	M_r4 =	4.9619 (mg/s)
	mass flux in river at SW-004A	M_r4A =	8.5426 (mg/s)
	mass flux in river at SW-005	M_r5 =	14.1315 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	15.2887 (mg/s)
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C_r1 =	0.09463 (mg/L)
	concentration in river at SW-002	C_r2 =	0.09326 (mg/L)
	concentration in river at SW-003	C_r3 =	0.09219 (mg/L)
	concentration in river at SW-004	C_r4 =	0.08940 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.08894 (mg/L)
	concentration in river at SW-005	C_r5 =	0.08816 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.08807 (mg/L)
	concentration in Colby Lake	C_cl =	0.05091 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case Parameter	Year 20 Barium				
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0077	(mg/L)	
	concentration of surface water into SW-002	C s2 =	0.0077	(mg/L)	
	concentration of surface water into SW-003	C s3 =	0.0077	(mg/L)	
	concentration of surface water into SW-004	C s4 =	0.0077	(mg/L)	
	concentration of surface water into SW-004A	C s4A =	0.0077	(mg/L)	
	concentration of surface water into SW-005	C s5 =	0.0077	(mg/L)	
	concentration of surface water into USGS Gage	C s6 =	0.0077	(mg/L)	
	concentration of surface water into Colby Lake	C scl =	0.0077	(mg/L)	
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0077	(mg/L)	
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0050	(mg/L)	
	concentration of West Pit overflow	C sms =	#N/A	(mg/L)	
	concentration of ground water into SW-001	C g1 =	0.0219	(mg/L)	
	concentration of ground water into SW-002	C g2 =	0.0219	(mg/L)	
	concentration of ground water into SW-003	C g3 =	0.0219	(mg/L)	
	concentration of ground water into SW-004	C g4 =	0.0219	(mg/L)	
	concentration of ground water into SW-004A	C g4A =	0.0219	(mg/L)	
	concentration of ground water into SW-005	C g5 =	0.0219	(mg/L)	
	concentration of ground water into USGS Gage	C g6 =	0.0219	(mg/L)	
	concentration of ground water into Colby Lake	C gcl =	0.0219	(mg/L)	
	concentration of ground water seepage from East Pit	C gep =	#N/A	(mg/L)	
	concentration of ground water seepage from West Pit	C gwp =	#N/A	(mg/L)	
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	0.1900	(mg/L)	
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	0.1900	(mg/L)	
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.1900	(mg/L)	
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.1900	(mg/L)	
	concentration of liner leakage from LOSP	C gC4LO =	0.1900	(mg/L)	
	concentration of seepage from Overburden (Storage)	C gOS =	0.0168	(mg/L)	
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	0.0140	(mg/L)	
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	0.1900	(mg/L)	
	concentration of liner leakage from Cat 3 sumps	C gC3s =	0.1900	(mg/L)	
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.1900	(mg/L)	
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.1900	(mg/L)	
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.1900	(mg/L)	
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0168	(mg/L)	
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A	(mg/L)	
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0219	(mg/L)	
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0219	(mg/L)	
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0219	(mg/L)	
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.2800	(mg/L)	
	Low Flow				
	Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	-	(mg/s)
		mass flux of ground water into SW-001	M g1 =	0.11166	(mg/s)
		mass flux of surface discharges from upstream of PM-1	M sns =	0.14150	(mg/s)
		mass flux of surface water into SW-002	M s2 =	-	(mg/s)
mass flux of ground water into SW-002		M g2 =	0.15992	(mg/s)	
mass flux of surface water into SW-003		M s3 =	-	(mg/s)	
mass flux of ground water into SW-003		M g3 =	0.06312	(mg/s)	
mass flux of seepage from East Pit to SW-003		M gep_003 =	#N/A	(mg/s)	
mass flux of liner leakage from Cat 3 stockpile to SW-003		M gC3_003 =	0.00008	(mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-003		M gC3LO_00 =	0.00002	(mg/s)	
mass flux of liner leakage from Cat 3 sumps to SW-003		M gC3s_003 =	0.00000	(mg/s)	
mass flux of surface water into SW-004		M s4 =	-	(mg/s)	
mass flux of ground water into SW-004		M g4 =	0.18848	(mg/s)	
mass flux of seepage from East Pit to SW-004		M gep_004 =	#N/A	(mg/s)	
mass flux of seepage from West Pit		M gwp =	#N/A	(mg/s)	
mass flux of liner leakage from Cat 3 stockpile to SW-004		M gC3_004 =	-	(mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-004		M gC3LO_00 =	0.00002	(mg/s)	
mass flux of liner leakage from Cat 4 stockpile		M gC4 =	0.00000	(mg/s)	
mass flux of liner leakage from LOSP		M gC4LO =	0.00002	(mg/s)	
mass flux of seepage from Overburden (Storage)		M gOS =	0.03643	(mg/s)	
mass flux of liner leakage from Cat 3LO sumps to SW-004		M gC3LOs_0 =	0.00000	(mg/s)	
mass flux of liner leakage from Cat 4 sumps		M gC4s =	0.00000	(mg/s)	
mass flux of liner leakage from LOSP sumps		M gC4LOs =	0.00000	(mg/s)	
mass flux of seepage from Overburden Ponds - PW1		M gOp1 =	0.00901	(mg/s)	
mass flux of leakage from Haul Road Pond - PW2		M gHRp2 =	0.00001	(mg/s)	
mass flux of leakage from Haul Road Pond - PW4		M gHRp4 =	0.00002	(mg/s)	
mass flux of leakage from RTH Pond - PW3		M gRTHp =	0.00000	(mg/s)	
mass flux of liner leakage from WWTF pond		M_gWTFp =	0.00002	(mg/s)	
mass flux of surface water into SW-004A		M s4A =	-	(mg/s)	
mass flux of ground water into SW-004A		M g4A =	0.85678	(mg/s)	
mass flux of West Pit overflow		M sms =	#N/A	(mg/s)	
mass flux of liner leakage from Cat 1/2 stockpile		M gC12 =	0.03307	(mg/s)	
mass flux of liner leakage from Cat 1/2 sumps		M gC12s =	0.00000	(mg/s)	
mass flux of seepage from Overburden (Cat 1/2)		M gO12 =	0.01810	(mg/s)	
mass flux of seepage from Overburden Pond - PW7		M gOp7 =	#N/A	(mg/s)	
mass flux of surface water into SW-005		M s5 =	-	(mg/s)	
mass flux of ground water into SW-005		M g5 =	1.40816	(mg/s)	
mass flux of surface water into USGS Gage		M s6 =	-	(mg/s)	
mass flux of ground water into USGS Gage		M g6 =	0.29156	(mg/s)	
mass flux of surface water into Colby Lake		M scl =	-	(mg/s)	
mass flux of ground water into Colby Lake		M gcl =	0.72579	(mg/s)	
mass flux of surface water from Hoyt Lakes WWTP		M shl =	0.08476	(mg/s)	
Low Flow					
Mass balance at each node		mass flux in river at SW-001	M r1 =	0.2532	(mg/s)
	mass flux in river at SW-002	M r2 =	0.4131	(mg/s)	
	mass flux in river at SW-003	M r3 =	0.4763	(mg/s)	
	mass flux in river at SW-004	M r4 =	0.7103	(mg/s)	
	mass flux in river at SW-004A	M r4A =	1.6182	(mg/s)	
	mass flux in river at SW-005	M r5 =	3.0264	(mg/s)	
	mass flux in river at USGS Gage	M r6 =	3.3180	(mg/s)	
	mass flux into Colby Lake	M cl =	4.1285	(mg/s)	
Low Flow					
Convert mass flux to concentration	concentration in river at SW-001	C r1 =	0.00758	(mg/L)	
	concentration in river at SW-002	C r2 =	0.01015	(mg/L)	
	concentration in river at SW-003	C r3 =	0.01085	(mg/L)	
	concentration in river at SW-004	C r4 =	0.01280	(mg/L)	
	concentration in river at SW-004A	C r4A =	0.01685	(mg/L)	
	concentration in river at SW-005	C r5 =	0.01888	(mg/L)	
	concentration in river at USGS Gage	C r6 =	0.01911	(mg/L)	
	concentration in Colby Lake	C cl =	0.00932	(mg/L)	



Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case		Year 20	
Parameter		Beryllium	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0001 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0001 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0001 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0001 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0001 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0001 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0001 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0001 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0001 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0001 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0001 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0001 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0001 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0001 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0001 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0001 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0001 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0001 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.0023 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0023 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0023 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0023 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	- (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.0023 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0023 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0023 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0023 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	- (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0001 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0001 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0001 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0026 (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00074 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.00283 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.00106 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00042 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.00125 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	- (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00000 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.00567 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.00003 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.00931 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.00193 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.00480 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00110 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	0.0038 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.0046 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.0050 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.0063 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.0120 (mg/s)
	mass flux in river at SW-005	M_r5 =	0.0213 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	0.0232 (mg/s)
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C_r1 =	0.00011 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00011 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00011 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00011 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00012 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00013 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00013 (mg/L)
	concentration in Colby Lake	C_cl =	0.00010 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case	Year 20		
Parameter	Calcium		
Input concentration data	concentration of surface water into SW-001	C s1 =	17.0000 (mg/L)
	concentration of surface water into SW-002	C s2 =	17.0000 (mg/L)
	concentration of surface water into SW-003	C s3 =	17.0000 (mg/L)
	concentration of surface water into SW-004	C s4 =	17.0000 (mg/L)
	concentration of surface water into SW-004A	C s4A =	17.0000 (mg/L)
	concentration of surface water into SW-005	C s5 =	17.0000 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	17.0000 (mg/L)
	concentration of surface water into Colby Lake	C scl =	17.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	17.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	24.5000 (mg/L)
	concentration of West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	14.7900 (mg/L)
	concentration of ground water into SW-002	C g2 =	14.7900 (mg/L)
	concentration of ground water into SW-003	C g3 =	14.7900 (mg/L)
	concentration of ground water into SW-004	C g4 =	14.7900 (mg/L)
	concentration of ground water into SW-004A	C g4A =	14.7900 (mg/L)
	concentration of ground water into SW-005	C g5 =	14.7900 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	14.7900 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	14.7900 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	540.0000 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	480.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	480.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	480.0000 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	465.1403 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	9.3700 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	15.8000 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	540.0000 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C gC3s =	480.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	480.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	480.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	465.1403 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	9.3700 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	14.7900 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	14.7900 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	14.7900 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	541.0000 (mg/L)
Low Flow			
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	(mg/s)
	mass flux of ground water into SW-001	M g1 =	75.34026 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	693.35000 (mg/s)
	mass flux of surface water into SW-002	M s2 =	(mg/s)
	mass flux of ground water into SW-002	M g2 =	107.89920 (mg/s)
	mass flux of surface water into SW-003	M s3 =	(mg/s)
	mass flux of ground water into SW-003	M g3 =	42.58957 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep 003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M gC3 003 =	0.20077 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO 00 =	0.04200 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M gC3s 003 =	0.00025 (mg/s)
	mass flux of surface water into SW-004	M s4 =	(mg/s)
	mass flux of ground water into SW-004	M g4 =	127.16988 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep 004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M gC3 004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO 00 =	0.04200 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00397 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.06120 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	20.27794 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs 0 =	0.00047 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00022 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00042 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	5.01400 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00563 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.01206 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.03756 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M g4A =	578.09279 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M gC12 =	93.98106 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M gC12s =	0.01183 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M gO12 =	20.42604 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	- (mg/s)
	mass flux of ground water into SW-005	M g5 =	950.12439 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	196.72179 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	489.71169 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl =	187.62900 (mg/s)
Low Flow			
Mass balance at each node	mass flux in river at SW-001	M r1 =	768.6903 (mg/s)
	mass flux in river at SW-002	M r2 =	876.5895 (mg/s)
	mass flux in river at SW-003	M r3 =	919.4220 (mg/s)
	mass flux in river at SW-004	M r4 =	1,072.0476 (mg/s)
	mass flux in river at SW-004A	M r4A =	1,764.5594 (mg/s)
	mass flux in river at SW-005	M r5 =	2,714.6838 (mg/s)
	mass flux in river at USGS Gage	M r6 =	2,911.4055 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M cl =	3,588.7462 (mg/s)
	concentration in river at SW-001	C r1 =	23.01881 (mg/L)
	concentration in river at SW-002	C r2 =	21.54343 (mg/L)
	concentration in river at SW-003	C r3 =	20.95067 (mg/L)
	concentration in river at SW-004	C r4 =	19.31626 (mg/L)
	concentration in river at SW-004A	C r4A =	18.37062 (mg/L)
	concentration in river at SW-005	C r5 =	16.93562 (mg/L)
	concentration in river at USGS Gage	C r6 =	16.77122 (mg/L)
	concentration in Colby Lake	C cl =	16.92460 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case		Year 20	
Parameter		Cadmium	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0001 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0001 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0001 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0001 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0001 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0001 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0001 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0001 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0001 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0001 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0001 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0001 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0001 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0001 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0001 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0001 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0001 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0001 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.0149 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0149 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0149 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0149 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0001 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.0149 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0149 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0149 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0149 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0001 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0001 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0001 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0001 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0073 (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00051 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.00283 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.00073 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00029 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.00086 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00013 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00003 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00000 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.00391 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.00003 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.00642 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.00133 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.00331 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00110 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	0.0033 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.0041 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.0044 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.0054 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.0093 (mg/s)
	mass flux in river at SW-005	M_r5 =	0.0158 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	0.0171 (mg/s)
	mass flux into Colby Lake	M_cl =	0.0215 (mg/s)
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C_r1 =	0.00010 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00010 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00010 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00010 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00010 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00010 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00010 (mg/L)
	concentration in Colby Lake	C_cl =	0.00010 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case	Year 20			
Parameter	Chloride			
Input concentration data	concentration of surface water into SW-001	C s1 =	8.0000 (mg/L)	
	concentration of surface water into SW-002	C s2 =	8.0000 (mg/L)	
	concentration of surface water into SW-003	C s3 =	8.0000 (mg/L)	
	concentration of surface water into SW-004	C s4 =	8.0000 (mg/L)	
	concentration of surface water into SW-004A	C s4A =	8.0000 (mg/L)	
	concentration of surface water into SW-005	C s5 =	8.0000 (mg/L)	
	concentration of surface water into USGS Gage	C s6 =	8.0000 (mg/L)	
	concentration of surface water into Colby Lake	C scl =	8.0000 (mg/L)	
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	8.0000 (mg/L)	
	concentration of surface water discharges from upstream of PM-1	C sns =	1.6000 (mg/L)	
	concentration of West Pit overflow	C sms =	#N/A (mg/L)	
	concentration of ground water into SW-001	C g1 =	6.6000 (mg/L)	
	concentration of ground water into SW-002	C g2 =	6.6000 (mg/L)	
	concentration of ground water into SW-003	C g3 =	6.6000 (mg/L)	
	concentration of ground water into SW-004	C g4 =	6.6000 (mg/L)	
	concentration of ground water into SW-004A	C g4A =	6.6000 (mg/L)	
	concentration of ground water into SW-005	C g5 =	6.6000 (mg/L)	
	concentration of ground water into USGS Gage	C g6 =	6.6000 (mg/L)	
	concentration of ground water into Colby Lake	C gcl =	6.6000 (mg/L)	
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)	
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)	
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	- (mg/L)	
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	35.0562 (mg/L)	
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	20.5639 (mg/L)	
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	43.5190 (mg/L)	
	concentration of liner leakage from LOSP	C gC4LO =	2.5396 (mg/L)	
	concentration of seepage from Overburden (Storage)	C gOS =	5.3500 (mg/L)	
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	2.3300 (mg/L)	
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	- (mg/L)	
	concentration of liner leakage from Cat 3 sumps	C gC3s =	35.0562 (mg/L)	
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	20.5639 (mg/L)	
	concentration of liner leakage from Cat 4 sumps	C gC4s =	43.5190 (mg/L)	
	concentration of liner leakage from LOSP sumps	C gC4LOs =	2.5396 (mg/L)	
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	5.3500 (mg/L)	
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)	
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	6.6000 (mg/L)	
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	6.6000 (mg/L)	
	concentration of leakage from RTH Pond - PW3	C gRTHp =	6.6000 (mg/L)	
	concentration of liner leakage from WWTF ponc	C_gWTFp =	14.4000 (mg/L)	
	Convert concentration to mass flux	Low Flow		
		mass flux of surface water into SW-001	M s1 =	(mg/s)
		mass flux of ground water into SW-001	M g1 =	33.62040 (mg/s)
mass flux of surface discharges from upstream of PM-1		M sns =	45.28000 (mg/s)	
mass flux of surface water into SW-002		M s2 =	(mg/s)	
mass flux of ground water into SW-002		M g2 =	48.14975 (mg/s)	
mass flux of surface water into SW-003		M s3 =	(mg/s)	
mass flux of ground water into SW-003		M g3 =	19.00549 (mg/s)	
mass flux of seepage from East Pit to SW-003		M gep 003 =	#N/A (mg/s)	
mass flux of liner leakage from Cat 3 stockpile to SW-003		M gC3 003 =	0.01466 (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-003		M gC3LO 00 =	0.00180 (mg/s)	
mass flux of liner leakage from Cat 3 sumps to SW-003		M gC3s 003 =	0.00002 (mg/s)	
mass flux of surface water into SW-004		M s4 =	(mg/s)	
mass flux of ground water into SW-004		M g4 =	56.74924 (mg/s)	
mass flux of seepage from East Pit to SW-004		M gep 004 =	#N/A (mg/s)	
mass flux of seepage from West Pit		M gwp =	#N/A (mg/s)	
mass flux of liner leakage from Cat 3 stockpile to SW-004		M gC3 004 =	- (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-004		M gC3LO 00 =	0.00180 (mg/s)	
mass flux of liner leakage from Cat 4 stockpile		M gC4 =	0.00036 (mg/s)	
mass flux of liner leakage from LOSP		M gC4LO =	0.00033 (mg/s)	
mass flux of seepage from Overburden (Storage)		M gOS =	11.57812 (mg/s)	
mass flux of liner leakage from Cat 3LO sumps to SW-004		M gC3LOs 0 =	0.00002 (mg/s)	
mass flux of liner leakage from Cat 4 sumps		M gC4s =	0.00002 (mg/s)	
mass flux of liner leakage from LOSP sumps		M gC4LOs =	0.00000 (mg/s)	
mass flux of seepage from Overburden Ponds - PW1		M gOp1 =	2.86285 (mg/s)	
mass flux of leakage from Haul Road Pond - PW2		M gHRp2 =	0.00251 (mg/s)	
mass flux of leakage from Haul Road Pond - PW4		M gHRp4 =	0.00538 (mg/s)	
mass flux of leakage from RTH Pond - PW3		M gRTHp =	0.00000 (mg/s)	
mass flux of liner leakage from WWTF pond		M gWTFp =	0.00100 (mg/s)	
mass flux of surface water into SW-004A		M s4A =	- (mg/s)	
mass flux of ground water into SW-004A		M g4A =	257.97244 (mg/s)	
mass flux of West Pit overflow		M sms =	#N/A (mg/s)	
mass flux of liner leakage from Cat 1/2 stockpile		M gC12 =	- (mg/s)	
mass flux of liner leakage from Cat 1/2 sumps		M gC12s =	- (mg/s)	
mass flux of seepage from Overburden (Cat 1/2)		M gO12 =	3.01219 (mg/s)	
mass flux of seepage from Overburden Pond - PW7		M gOp7 =	#N/A (mg/s)	
mass flux of surface water into SW-005		M s5 =	- (mg/s)	
mass flux of ground water into SW-005		M g5 =	423.99060 (mg/s)	
mass flux of surface water into USGS Gage		M s6 =	- (mg/s)	
mass flux of ground water into USGS Gage		M g6 =	87.78660 (mg/s)	
mass flux of surface water into Colby Lake		M scl =	- (mg/s)	
mass flux of ground water into Colby Lake		M gcl =	218.53260 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP		M shl =	88.29600 (mg/s)	
Mass balance at each node	Low Flow			
	mass flux in river at SW-001	M r1 =	78.9004 (mg/s)	
	mass flux in river at SW-002	M r2 =	127.0501 (mg/s)	
	mass flux in river at SW-003	M r3 =	146.0721 (mg/s)	
	mass flux in river at SW-004	M r4 =	217.2738 (mg/s)	
	mass flux in river at SW-004A	M r4A =	478.2584 (mg/s)	
	mass flux in river at SW-005	M r5 =	902.2490 (mg/s)	
	mass flux in river at USGS Gage	M r6 =	990.0356 (mg/s)	
mass flux into Colby Lake	M cl =	1,296.8642 (mg/s)		
Convert mass flux to concentration	Low Flow			
	concentration in river at SW-001	C r1 =	2.36271 (mg/L)	
	concentration in river at SW-002	C r2 =	3.12244 (mg/L)	
	concentration in river at SW-003	C r3 =	3.32851 (mg/L)	
	concentration in river at SW-004	C r4 =	3.91486 (mg/L)	
	concentration in river at SW-004A	C r4A =	4.97909 (mg/L)	
	concentration in river at SW-005	C r5 =	5.62870 (mg/L)	
	concentration in river at USGS Gage	C r6 =	5.70312 (mg/L)	
	concentration in Colby Lake	C cl =	7.70261 (mg/L)	

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case Parameter	Year 20 Cobalt			
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0005 (mg/L)	
	concentration of surface water into SW-002	C s2 =	0.0005 (mg/L)	
	concentration of surface water into SW-003	C s3 =	0.0005 (mg/L)	
	concentration of surface water into SW-004	C s4 =	0.0005 (mg/L)	
	concentration of surface water into SW-004A	C s4A =	0.0005 (mg/L)	
	concentration of surface water into SW-005	C s5 =	0.0005 (mg/L)	
	concentration of surface water into USGS Gage	C s6 =	0.0005 (mg/L)	
	concentration of surface water into Colby Lake	C scl =	0.0005 (mg/L)	
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0005 (mg/L)	
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0005 (mg/L)	
	concentration of West Pit overflow	C sms =	#N/A (mg/L)	
	concentration of ground water into SW-001	C g1 =	0.0017 (mg/L)	
	concentration of ground water into SW-002	C g2 =	0.0017 (mg/L)	
	concentration of ground water into SW-003	C g3 =	0.0017 (mg/L)	
	concentration of ground water into SW-004	C g4 =	0.0017 (mg/L)	
	concentration of ground water into SW-004A	C g4A =	0.0017 (mg/L)	
	concentration of ground water into SW-005	C g5 =	0.0017 (mg/L)	
	concentration of ground water into USGS Gage	C g6 =	0.0017 (mg/L)	
	concentration of ground water into Colby Lake	C gcl =	0.0017 (mg/L)	
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)	
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)	
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	0.0520 (mg/L)	
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	44.0000 (mg/L)	
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	44.0000 (mg/L)	
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	44.0000 (mg/L)	
	concentration of liner leakage from LOSP	C gC4LO =	16.3735 (mg/L)	
	concentration of seepage from Overburden (Storage)	C gOS =	0.0011 (mg/L)	
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	0.0013 (mg/L)	
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	0.0520 (mg/L)	
	concentration of liner leakage from Cat 3 sumps	C gC3s =	44.0000 (mg/L)	
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	44.0000 (mg/L)	
	concentration of liner leakage from Cat 4 sumps	C gC4s =	44.0000 (mg/L)	
	concentration of liner leakage from LOSP sumps	C gC4LOs =	16.3735 (mg/L)	
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0011 (mg/L)	
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)	
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0017 (mg/L)	
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0017 (mg/L)	
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0017 (mg/L)	
	concentration of liner leakage from WWTF pond	C_gWTFp =	10.6000 (mg/L)	
			Low Flow	
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	- (mg/s)	
	mass flux of ground water into SW-001	M g1 =	0.00841 (mg/s)	
	mass flux of surface discharges from upstream of PM-1	M sns =	0.01415 (mg/s)	
	mass flux of surface water into SW-002	M s2 =	- (mg/s)	
	mass flux of ground water into SW-002	M g2 =	0.01204 (mg/s)	
	mass flux of surface water into SW-003	M s3 =	- (mg/s)	
	mass flux of ground water into SW-003	M g3 =	0.00475 (mg/s)	
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)	
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M gC3_003 =	0.01840 (mg/s)	
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_00 =	0.00385 (mg/s)	
	mass flux of liner leakage from Cat 3 sumps to SW-003	M gC3s_003 =	0.00002 (mg/s)	
	mass flux of surface water into SW-004	M s4 =	- (mg/s)	
	mass flux of ground water into SW-004	M g4 =	0.01419 (mg/s)	
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)	
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)	
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M gC3_004 =	- (mg/s)	
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_00 =	0.00385 (mg/s)	
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00036 (mg/s)	
	mass flux of liner leakage from LOSP	M gC4LO =	0.00215 (mg/s)	
	mass flux of seepage from Overburden (Storage)	M gOS =	0.00240 (mg/s)	
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_0 =	0.00004 (mg/s)	
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00002 (mg/s)	
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00001 (mg/s)	
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.00059 (mg/s)	
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00000 (mg/s)	
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00000 (mg/s)	
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)	
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00074 (mg/s)	
	mass flux of surface water into SW-004A	M s4A =	- (mg/s)	
	mass flux of ground water into SW-004A	M g4A =	0.06449 (mg/s)	
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)	
	mass flux of liner leakage from Cat 1/2 stockpile	M gC12 =	0.00905 (mg/s)	
	mass flux of liner leakage from Cat 1/2 sumps	M gC12s =	0.00000 (mg/s)	
	mass flux of seepage from Overburden (Cat 1/2)	M gO12 =	0.00168 (mg/s)	
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)	
	mass flux of surface water into SW-005	M s5 =	- (mg/s)	
	mass flux of ground water into SW-005	M g5 =	0.10600 (mg/s)	
	mass flux of surface water into USGS Gage	M s6 =	- (mg/s)	
	mass flux of ground water into USGS Gage	M g6 =	0.02195 (mg/s)	
mass flux of surface water into Colby Lake	M scl =	- (mg/s)		
mass flux of ground water into Colby Lake	M gcl =	0.05463 (mg/s)		
mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.00552 (mg/s)		
			Low Flow	
Mass balance at each node	mass flux in river at SW-001	M r1 =	0.0226 (mg/s)	
	mass flux in river at SW-002	M r2 =	0.0346 (mg/s)	
	mass flux in river at SW-003	M r3 =	0.0616 (mg/s)	
	mass flux in river at SW-004	M r4 =	0.0860 (mg/s)	
	mass flux in river at SW-004A	M r4A =	0.1612 (mg/s)	
	mass flux in river at SW-005	M r5 =	0.2672 (mg/s)	
	mass flux in river at USGS Gage	M r6 =	0.2892 (mg/s)	
	mass flux into Colby Lake	M cl =	0.3493 (mg/s)	
			Low Flow	
Convert mass flux to concentration	concentration in river at SW-001	C r1 =	0.00068 (mg/L)	
	concentration in river at SW-002	C r2 =	0.00085 (mg/L)	
	concentration in river at SW-003	C r3 =	0.00140 (mg/L)	
	concentration in river at SW-004	C r4 =	0.00155 (mg/L)	
	concentration in river at SW-004A	C r4A =	0.00168 (mg/L)	
	concentration in river at SW-005	C r5 =	0.00167 (mg/L)	
	concentration in river at USGS Gage	C r6 =	0.00167 (mg/L)	
	concentration in Colby Lake	C cl =	0.00066 (mg/L)	

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case Parameter	Year 20 Copper		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0017 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0017 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0017 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0017 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0017 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0017 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0017 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0017 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0190 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0012 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0030 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0030 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0030 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0030 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0030 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0030 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0030 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0030 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0920 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	202.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	202.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	202.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	2.9553 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0214 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0170 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0920 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	202.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	202.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	202.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	2.9553 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0214 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0030 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0030 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0030 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	39.0000 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.01503 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.03509 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.02152 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00849 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.08449 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.01767 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00011 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.02537 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.01767 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00167 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00039 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.04640 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00020 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00009 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.01147 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00271 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.11531 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.01601 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.02198 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.18951 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.03924 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.09768 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.20970 (mg/s)
Mass balance at each node	mass flux in river at SW-001	M_r1 =	0.0501 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.0716 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.1824 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.2885 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.4418 (mg/s)
	mass flux in river at SW-005	M_r5 =	0.8313 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	0.6705 (mg/s)
	mass flux into Colby Lake	M_cl =	0.9779 (mg/s)
Convert mass flux to concentration	concentration in river at SW-001	C_r1 =	0.00150 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00176 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00416 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00520 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00460 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00394 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00386 (mg/L)
	concentration in Colby Lake	C_cl =	0.00211 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case	Year 20		
Parameter	Fluoride		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0700 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0700 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0700 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0700 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0700 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0700 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0700 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0700 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0700 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.1400 (mg/L)
	concentration of West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.2800 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.2800 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.2800 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.2800 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.2800 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.2800 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.2800 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.2800 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	0.0621 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	0.0622 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0622 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0622 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.0622 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.2239 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	0.4200 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	0.0621 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C gC3s =	0.0622 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.0622 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0622 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0622 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.2239 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.2800 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.2800 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.2800 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	37.7000 (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M s1 =	(mg/s)
	mass flux of ground water into SW-001	M g1 =	1.42632 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	3.96200 (mg/s)
	mass flux of surface water into SW-002	M s2 =	(mg/s)
	mass flux of ground water into SW-002	M g2 =	2.04272 (mg/s)
	mass flux of surface water into SW-003	M s3 =	(mg/s)
	mass flux of ground water into SW-003	M g3 =	0.80629 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M gC3_003 =	0.00003 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_00 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	(mg/s)
	mass flux of ground water into SW-004	M g4 =	2.40754 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M gC3_004 =	(mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_00 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.48453 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_0 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.11981 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00011 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00023 (mg/s)
mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)	
mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00262 (mg/s)	
mass flux of surface water into SW-004A	M s4A =	(mg/s)	
mass flux of ground water into SW-004A	M g4A =	10.94429 (mg/s)	
mass flux of West Pit overflow	M sms =	#N/A (mg/s)	
mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.01081 (mg/s)	
mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)	
mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.54297 (mg/s)	
mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)	
mass flux of surface water into SW-005	M s5 =	(mg/s)	
mass flux of ground water into SW-005	M g5 =	17.98748 (mg/s)	
mass flux of surface water into USGS Gage	M s6 =	(mg/s)	
mass flux of ground water into USGS Gage	M g6 =	3.72428 (mg/s)	
mass flux of surface water into Colby Lake	M scl =	(mg/s)	
mass flux of ground water into Colby Lake	M gcl =	9.27108 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.77259 (mg/s)	
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M r1 =	5.3883 (mg/s)
	mass flux in river at SW-002	M r2 =	7.4310 (mg/s)
	mass flux in river at SW-003	M r3 =	8.2374 (mg/s)
	mass flux in river at SW-004	M r4 =	11.2522 (mg/s)
	mass flux in river at SW-004A	M r4A =	22.7503 (mg/s)
	mass flux in river at SW-005	M r5 =	40.7377 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	44.4620 (mg/s)
	mass flux into Colby Lake	M cl =	54.5057 (mg/s)
	Low Flow		
	concentration in river at SW-001	C r1 =	0.16136 (mg/L)
	concentration in river at SW-002	C r2 =	0.18263 (mg/L)
	concentration in river at SW-003	C r3 =	0.18770 (mg/L)
	concentration in river at SW-004	C r4 =	0.20274 (mg/L)
	concentration in river at SW-004A	C r4A =	0.23685 (mg/L)
	concentration in river at SW-005	C r5 =	0.25414 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.25612 (mg/L)
	concentration in Colby Lake	C cl =	0.09621 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case Parameter	Year 20 Iron		
Input concentration data	concentration of surface water into SW-001	C_s1 =	1.6000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	1.6000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	1.6000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	1.6000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	1.6000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	1.6000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	1.6000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	1.6000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	1.6000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0300 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	2.8440 (mg/L)
	concentration of ground water into SW-002	C_g2 =	2.8440 (mg/L)
	concentration of ground water into SW-003	C_g3 =	2.8440 (mg/L)
	concentration of ground water into SW-004	C_g4 =	2.8440 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	2.8440 (mg/L)
	concentration of ground water into SW-005	C_g5 =	2.8440 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	2.8440 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	2.8440 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.8100 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	235.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	235.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	235.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	235.0000 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.2255 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.1500 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.8100 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	235.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	235.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	235.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	235.0000 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.2255 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	2.8440 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	2.8440 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	2.8440 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	92.2000 (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	14.48734 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.84900 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	20.74816 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	8.18964 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.09829 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.02056 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00012 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	24.45376 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.02056 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00194 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.03092 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.48801 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00023 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00011 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00021 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.12067 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00108 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00232 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00640 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	111.16267 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.14097 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00002 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.19392 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	182.70140 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	37.82804 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	94.16768 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	17.65920 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	15.3363 (mg/s)
	mass flux in river at SW-002	M_r2 =	36.0845 (mg/s)
	mass flux in river at SW-003	M_r3 =	44.3931 (mg/s)
	mass flux in river at SW-004	M_r4 =	69.5195 (mg/s)
	mass flux in river at SW-004A	M_r4A =	181.0170 (mg/s)
	mass flux in river at SW-005	M_r5 =	363.7184 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	401.5465 (mg/s)
	mass flux into Colby Lake	M_cl =	513.3734 (mg/s)
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C_r1 =	0.45925 (mg/L)
	concentration in river at SW-002	C_r2 =	0.88683 (mg/L)
	concentration in river at SW-003	C_r3 =	1.01158 (mg/L)
	concentration in river at SW-004	C_r4 =	1.25261 (mg/L)
	concentration in river at SW-004A	C_r4A =	1.88455 (mg/L)
	concentration in river at SW-005	C_r5 =	2.26907 (mg/L)
	concentration in river at USGS Gage	C_r6 =	2.31312 (mg/L)
	concentration in Colby Lake	C_cl =	1.70974 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case Parameter	Year 20 Hardness		
Input concentration data	concentration of surface water into SW-001	C_s1 =	110.0000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	110.0000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	110.0000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	110.0000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	110.0000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	110.0000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	110.0000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	110.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	110.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	110.0000 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	66.4200 (mg/L)
	concentration of ground water into SW-002	C_g2 =	66.4200 (mg/L)
	concentration of ground water into SW-003	C_g3 =	66.4200 (mg/L)
	concentration of ground water into SW-004	C_g4 =	66.4200 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	66.4200 (mg/L)
	concentration of ground water into SW-005	C_g5 =	66.4200 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	66.4200 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	66.4200 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	1,729.3495 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	5,435.6906 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	5,435.6906 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	5,435.6906 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	3,330.4638 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	43.5200 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	71.5000 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	1,729.3495 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	5,435.6906 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	5,435.6906 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	5,435.6906 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	3,330.4638 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	43.5200 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	66.4200 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	66.4200 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	66.4200 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	2,825.0000 (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	338.34348 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	3,113.00000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	484.56154 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	191.26430 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	2.27357 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.47561 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00286 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	571.10370 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.47561 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.04490 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.43819 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	94.18314 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00534 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00248 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00304 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	23.28806 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.02527 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.05414 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00002 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.19611 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	2,596.14083 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	300.97424 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.03789 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	92.43429 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	4,266.88722 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	883.45242 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	2,199.23262 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	1,214.07000 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	3,451.3435 (mg/s)
	mass flux in river at SW-002	M_r2 =	3,935.9050 (mg/s)
	mass flux in river at SW-003	M_r3 =	4,129.9214 (mg/s)
	mass flux in river at SW-004	M_r4 =	7,809.7442 (mg/s)
	mass flux in river at SW-004A	M_r4A =	7,809.3315 (mg/s)
	mass flux in river at SW-005	M_r5 =	12,076.2187 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	12,959.6711 (mg/s)
	mass flux into Colby Lake	M_cl =	16,372.9737 (mg/s)
	Low Flow		
	concentration in river at SW-001	C_r1 =	103.35220 (mg/L)
	concentration in river at SW-002	C_r2 =	96.73044 (mg/L)
	concentration in river at SW-003	C_r3 =	94.10763 (mg/L)
	concentration in river at SW-004	C_r4 =	86.84264 (mg/L)
	concentration in river at SW-004A	C_r4A =	81.30204 (mg/L)
	concentration in river at SW-005	C_r5 =	75.33778 (mg/L)
	concentration in river at USGS Gage	C_r6 =	74.65449 (mg/L)
	concentration in Colby Lake	C_cl =	104.94430 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case		Year 20	
Parameter		Potassium	
Input concentration data	concentration of surface water into SW-001	C_s1 =	1.3000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	1.3000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	1.3000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	1.3000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	1.3000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	1.3000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	1.3000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	1.3000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	1.3000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	2.7000 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	1.7500 (mg/L)
	concentration of ground water into SW-002	C_g2 =	1.7500 (mg/L)
	concentration of ground water into SW-003	C_g3 =	1.7500 (mg/L)
	concentration of ground water into SW-004	C_g4 =	1.7500 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	1.7500 (mg/L)
	concentration of ground water into SW-005	C_g5 =	1.7500 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	1.7500 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	1.7500 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	49.0000 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	38.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	38.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	38.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	38.0000 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	2.2600 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	4.4500 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	49.0000 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	38.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	38.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	38.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	38.0000 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	2.2600 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	1.7500 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	1.7500 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	1.7500 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	48.3000 (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	8.91450 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	76.41000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	12.76698 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	5.03933 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.01589 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00332 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00002 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	15.04715 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00332 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00031 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00500 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	4.89094 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00004 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00002 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00003 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	1.20935 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00067 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00143 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00335 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	68.40178 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	8.52791 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00107 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	5.75290 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	112.42175 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	23.27675 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	57.94425 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	14.34810 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	85.3245 (mg/s)
	mass flux in river at SW-002	M_r2 =	98.0915 (mg/s)
	mass flux in river at SW-003	M_r3 =	103.1501 (mg/s)
	mass flux in river at SW-004	M_r4 =	124.3117 (mg/s)
	mass flux in river at SW-004A	M_r4A =	206.9954 (mg/s)
	mass flux in river at SW-005	M_r5 =	319.4171 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	342.8939 (mg/s)
	mass flux into Colby Lake	M_cl =	414.9862 (mg/s)
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C_r1 =	2.55508 (mg/L)
	concentration in river at SW-002	C_r2 =	2.41074 (mg/L)
	concentration in river at SW-003	C_r3 =	2.35046 (mg/L)
	concentration in river at SW-004	C_r4 =	2.23986 (mg/L)
	concentration in river at SW-004A	C_r4A =	2.15500 (mg/L)
	concentration in river at SW-005	C_r5 =	1.99269 (mg/L)
	concentration in river at USGS Gage	C_r6 =	1.97410 (mg/L)
	concentration in Colby Lake	C_cl =	1.38835 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case		Year 20	
Parameter		Magnesium	
Input concentration data	concentration of surface water into SW-001	C_s1 =	8.0000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	8.0000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	8.0000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	8.0000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	8.0000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	8.0000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	8.0000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	8.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	8.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	10.5000 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	8.0200 (mg/L)
	concentration of ground water into SW-002	C_g2 =	8.0200 (mg/L)
	concentration of ground water into SW-003	C_g3 =	8.0200 (mg/L)
	concentration of ground water into SW-004	C_g4 =	8.0200 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	8.0200 (mg/L)
	concentration of ground water into SW-005	C_g5 =	8.0200 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	8.0200 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	8.0200 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	93.0000 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	1,030.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	1,030.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	1,030.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	527.4346 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	4.8800 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	9.0100 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	93.0000 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	1,030.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	1,030.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	1,030.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	527.4346 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	4.8800 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	8.0200 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	8.0200 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	8.0200 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	359.0000 (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	40.85388 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	297.15000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	58.50924 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	23.09455 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.43082 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.09012 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00054 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	68.95892 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.09012 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00851 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.06940 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	10.56098 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00101 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00047 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00048 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	2.61135 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00305 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00654 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.02492 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	313.47560 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	16.18563 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00204 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	11.64801 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	515.21282 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	106.67402 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	265.55022 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	88.29600 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	338.0039 (mg/s)
	mass flux in river at SW-002	M_r2 =	396.5131 (mg/s)
	mass flux in river at SW-003	M_r3 =	420.1291 (mg/s)
	mass flux in river at SW-004	M_r4 =	502.4664 (mg/s)
	mass flux in river at SW-004A	M_r4A =	843.7767 (mg/s)
	mass flux in river at SW-005	M_r5 =	1,358.9895 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	1,465.6635 (mg/s)
	mass flux into Colby Lake	M_cl =	1,819.5098 (mg/s)
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C_r1 =	10.12169 (mg/L)
	concentration in river at SW-002	C_r2 =	9.74487 (mg/L)
	concentration in river at SW-003	C_r3 =	9.57339 (mg/L)
	concentration in river at SW-004	C_r4 =	9.05347 (mg/L)
	concentration in river at SW-004A	C_r4A =	8.78446 (mg/L)
	concentration in river at SW-005	C_r5 =	8.47809 (mg/L)
	concentration in river at USGS Gage	C_r6 =	8.44299 (mg/L)
	concentration in Colby Lake	C_cl =	8.05183 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case		Year 20	
Parameter		Manganese	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.1500 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.1500 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.1500 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.1500 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.1500 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.1500 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.1500 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.1500 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.1500 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0086 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.1240 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.1240 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.1240 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.1240 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.1240 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.1240 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.1240 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.1240 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.7500 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	47.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	47.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	47.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	37.0217 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.1604 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.1160 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.7500 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	47.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	47.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	47.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	37.0217 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.1604 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.1240 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.1240 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.1240 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	16.4000 (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.63166 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.24338 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.90463 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.35707 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.01966 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00411 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00002 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	1.06620 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00411 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00039 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00487 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.34711 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00005 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00002 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00003 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.08583 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00005 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00010 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00114 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	4.84675 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.13053 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00002 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.14996 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	7.96588 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	1.64932 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	4.10576 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	1.65555 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	0.8750 (mg/s)
	mass flux in river at SW-002	M_r2 =	1.7797 (mg/s)
	mass flux in river at SW-003	M_r3 =	2.1605 (mg/s)
	mass flux in river at SW-004	M_r4 =	3.6705 (mg/s)
	mass flux in river at SW-004A	M_r4A =	8.7977 (mg/s)
	mass flux in river at SW-005	M_r5 =	16.7636 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	18.4129 (mg/s)
	mass flux into Colby Lake	M_cl =	24.1742 (mg/s)
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C_r1 =	0.02620 (mg/L)
	concentration in river at SW-002	C_r2 =	0.04374 (mg/L)
	concentration in river at SW-003	C_r3 =	0.04923 (mg/L)
	concentration in river at SW-004	C_r4 =	0.06613 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.09159 (mg/L)
	concentration in river at SW-005	C_r5 =	0.10458 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.10607 (mg/L)
	concentration in Colby Lake	C_cl =	0.14434 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case	Year 20			
Parameter	Sodium			
Input concentration data	concentration of surface water into SW-001	C s1 =	2.5000 (mg/L)	
	concentration of surface water into SW-002	C s2 =	2.5000 (mg/L)	
	concentration of surface water into SW-003	C s3 =	2.5000 (mg/L)	
	concentration of surface water into SW-004	C s4 =	2.5000 (mg/L)	
	concentration of surface water into SW-004A	C s4A =	2.5000 (mg/L)	
	concentration of surface water into SW-005	C s5 =	2.5000 (mg/L)	
	concentration of surface water into USGS Gage	C s6 =	2.5000 (mg/L)	
	concentration of surface water into Colby Lake	C scl =	2.5000 (mg/L)	
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	2.5000 (mg/L)	
	concentration of surface water discharges from upstream of PM-1	C sns =	4.8000 (mg/L)	
	concentration of West Pit overflow	C sms =	#N/A (mg/L)	
	concentration of ground water into SW-001	C g1 =	13.3300 (mg/L)	
	concentration of ground water into SW-002	C g2 =	13.3300 (mg/L)	
	concentration of ground water into SW-003	C g3 =	13.3300 (mg/L)	
	concentration of ground water into SW-004	C g4 =	13.3300 (mg/L)	
	concentration of ground water into SW-004A	C g4A =	13.3300 (mg/L)	
	concentration of ground water into SW-005	C g5 =	13.3300 (mg/L)	
	concentration of ground water into USGS Gage	C g6 =	13.3300 (mg/L)	
	concentration of ground water into Colby Lake	C gcl =	13.3300 (mg/L)	
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)	
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)	
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	681.0000 (mg/L)	
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	338.0000 (mg/L)	
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	338.0000 (mg/L)	
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	338.0000 (mg/L)	
	concentration of liner leakage from LOSP	C gC4LO =	199.2975 (mg/L)	
	concentration of seepage from Overburden (Storage)	C gOS =	4.6000 (mg/L)	
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	7.1900 (mg/L)	
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	681.0000 (mg/L)	
	concentration of liner leakage from Cat 3 sumps	C gC3s =	338.0000 (mg/L)	
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	338.0000 (mg/L)	
	concentration of liner leakage from Cat 4 sumps	C gC4s =	338.0000 (mg/L)	
	concentration of liner leakage from LOSP sumps	C gC4LOs =	199.2975 (mg/L)	
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	4.6000 (mg/L)	
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)	
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	13.3300 (mg/L)	
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	13.3300 (mg/L)	
	concentration of leakage from RTH Pond - PW3	C gRTHp =	13.3300 (mg/L)	
	concentration of liner leakage from WWTF pond	C_gWTFp =	451.0000 (mg/L)	
	Convert concentration to mass flux	Low Flow		
		mass flux of surface water into SW-001	M s1 =	(mg/s)
		mass flux of ground water into SW-001	M g1 =	67.90302 (mg/s)
		mass flux of surface discharges from upstream of PM-1	M sns =	135.84000 (mg/s)
		mass flux of surface water into SW-002	M s2 =	(mg/s)
mass flux of ground water into SW-002		M g2 =	97.24790 (mg/s)	
mass flux of surface water into SW-003		M s3 =	(mg/s)	
mass flux of ground water into SW-003		M g3 =	38.38532 (mg/s)	
mass flux of seepage from East Pit to SW-003		M gep_003 =	#N/A (mg/s)	
mass flux of liner leakage from Cat 3 stockpile to SW-003		M gC3_003 =	0.14137 (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-003		M gC3LO_00 =	0.02957 (mg/s)	
mass flux of liner leakage from Cat 3 sumps to SW-003		M gC3s_003 =	0.00018 (mg/s)	
mass flux of surface water into SW-004		M s4 =	(mg/s)	
mass flux of ground water into SW-004		M g4 =	114.61626 (mg/s)	
mass flux of seepage from East Pit to SW-004		M gep_004 =	#N/A (mg/s)	
mass flux of seepage from West Pit		M gwp =	#N/A (mg/s)	
mass flux of liner leakage from Cat 3 stockpile to SW-004		M gC3_004 =	- (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-004		M gC3LO_00 =	0.02957 (mg/s)	
mass flux of liner leakage from Cat 4 stockpile		M gC4 =	0.00279 (mg/s)	
mass flux of liner leakage from LOSP		M gC4LO =	0.02622 (mg/s)	
mass flux of seepage from Overburden (Storage)		M gOS =	9.95502 (mg/s)	
mass flux of liner leakage from Cat 3LO sumps to SW-004		M gC3LOs_0 =	0.00033 (mg/s)	
mass flux of liner leakage from Cat 4 sumps		M gC4s =	0.00015 (mg/s)	
mass flux of liner leakage from LOSP sumps		M gC4LOs =	0.00018 (mg/s)	
mass flux of seepage from Overburden Ponds - PW1		M gOp1 =	2.46151 (mg/s)	
mass flux of leakage from Haul Road Pond - PW2		M gHRp2 =	0.00507 (mg/s)	
mass flux of leakage from Haul Road Pond - PW4		M gHRp4 =	0.01087 (mg/s)	
mass flux of leakage from RTH Pond - PW3		M gRTHp =	0.00000 (mg/s)	
mass flux of liner leakage from WWTF pond		M_gWTFp =	0.03131 (mg/s)	
mass flux of surface water into SW-004A		M s4A =	- (mg/s)	
mass flux of ground water into SW-004A		M_g4A =	521.02615 (mg/s)	
mass flux of West Pit overflow		M sms =	#N/A (mg/s)	
mass flux of liner leakage from Cat 1/2 stockpile		M_gC12 =	118.52056 (mg/s)	
mass flux of liner leakage from Cat 1/2 sumps		M_gC12s =	0.01492 (mg/s)	
mass flux of seepage from Overburden (Cat 1/2)		M_gO12 =	9.29514 (mg/s)	
mass flux of seepage from Overburden Pond - PW7		M_gOp7 =	#N/A (mg/s)	
mass flux of surface water into SW-005		M s5 =	- (mg/s)	
mass flux of ground water into SW-005		M_g5 =	856.33253 (mg/s)	
mass flux of surface water into USGS Gage		M s6 =	- (mg/s)	
mass flux of ground water into USGS Gage		M_g6 =	177.30233 (mg/s)	
mass flux of surface water into Colby Lake		M scl =	- (mg/s)	
mass flux of ground water into Colby Lake		M_gcl =	441.36963 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP		M_shl =	27.59250 (mg/s)	
Mass balance at each node		Low Flow		
	mass flux in river at SW-001	M r1 =	203.7430 (mg/s)	
	mass flux in river at SW-002	M r2 =	300.9909 (mg/s)	
	mass flux in river at SW-003	M r3 =	339.5474 (mg/s)	
	mass flux in river at SW-004	M r4 =	466.6868 (mg/s)	
	mass flux in river at SW-004A	M r4A =	1,115.5436 (mg/s)	
	mass flux in river at SW-005	M r5 =	1,971.8761 (mg/s)	
Convert mass flux to concentration	mass flux in river at USGS Gage	M r6 =	2,149.1785 (mg/s)	
	mass flux into Colby Lake	M cl =	2,618.1406 (mg/s)	
	Low Flow			
	concentration in river at SW-001	C r1 =	6.10119 (mg/L)	
	concentration in river at SW-002	C r2 =	7.39728 (mg/L)	
	concentration in river at SW-003	C r3 =	7.73719 (mg/L)	
	concentration in river at SW-004	C r4 =	8.40881 (mg/L)	
	concentration in river at SW-004A	C r4A =	11.61380 (mg/L)	
	concentration in river at SW-005	C r5 =	12.30160 (mg/L)	
	concentration in river at USGS Gage	C r6 =	12.38039 (mg/L)	
	concentration in Colby Lake	C cl =	3.88257 (mg/L)	

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case	Year 20			
Parameter	Nickel			
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0016 (mg/L)	
	concentration of surface water into SW-002	C_s2 =	0.0016 (mg/L)	
	concentration of surface water into SW-003	C_s3 =	0.0016 (mg/L)	
	concentration of surface water into SW-004	C_s4 =	0.0016 (mg/L)	
	concentration of surface water into SW-004A	C_s4A =	0.0016 (mg/L)	
	concentration of surface water into SW-005	C_s5 =	0.0016 (mg/L)	
	concentration of surface water into USGS Gage	C_s6 =	0.0016 (mg/L)	
	concentration of surface water into Colby Lake	C_scl =	0.0016 (mg/L)	
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0033 (mg/L)	
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0016 (mg/L)	
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)	
	concentration of ground water into SW-001	C_g1 =	0.0163 (mg/L)	
	concentration of ground water into SW-002	C_g2 =	0.0163 (mg/L)	
	concentration of ground water into SW-003	C_g3 =	0.0163 (mg/L)	
	concentration of ground water into SW-004	C_g4 =	0.0163 (mg/L)	
	concentration of ground water into SW-004A	C_g4A =	0.0163 (mg/L)	
	concentration of ground water into SW-005	C_g5 =	0.0163 (mg/L)	
	concentration of ground water into USGS Gage	C_g6 =	0.0163 (mg/L)	
	concentration of ground water into Colby Lake	C_gcl =	0.0163 (mg/L)	
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)	
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)	
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.3824 (mg/L)	
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	762.0000 (mg/L)	
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	762.0000 (mg/L)	
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	762.0000 (mg/L)	
	concentration of liner leakage from LOSP	C_gC4LO =	200.0900 (mg/L)	
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0080 (mg/L)	
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0190 (mg/L)	
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.3824 (mg/L)	
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	762.0000 (mg/L)	
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	762.0000 (mg/L)	
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	762.0000 (mg/L)	
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	200.0900 (mg/L)	
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0080 (mg/L)	
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)	
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0163 (mg/L)	
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0163 (mg/L)	
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0163 (mg/L)	
	concentration of liner leakage from WWTF pond	C_gWTFp =	176.0000 (mg/L)	
				Low Flow
	Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	(mg/s)
		mass flux of ground water into SW-001	M_g1 =	0.08293 (mg/s)
mass flux of surface discharges from upstream of PM-1		M_sns =	0.04387 (mg/s)	
mass flux of surface water into SW-002		M_s2 =	(mg/s)	
mass flux of ground water into SW-002		M_g2 =	0.11877 (mg/s)	
mass flux of surface water into SW-003		M_s3 =	(mg/s)	
mass flux of ground water into SW-003		M_g3 =	0.04688 (mg/s)	
mass flux of seepage from East Pit to SW-003		M_gep_003 =	#N/A (mg/s)	
mass flux of liner leakage from Cat 3 stockpile to SW-003		M_gC3_003 =	0.31872 (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-003		M_gC3LO_00 =	0.06667 (mg/s)	
mass flux of liner leakage from Cat 3 sumps to SW-003		M_gC3s_003 =	0.00040 (mg/s)	
mass flux of surface water into SW-004		M_s4 =	(mg/s)	
mass flux of ground water into SW-004		M_g4 =	0.13998 (mg/s)	
mass flux of seepage from East Pit to SW-004		M_gep_004 =	#N/A (mg/s)	
mass flux of seepage from West Pit		M_gwp =	#N/A (mg/s)	
mass flux of liner leakage from Cat 3 stockpile to SW-004		M_gC3_004 =	(mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-004		M_gC3LO_00 =	0.06667 (mg/s)	
mass flux of liner leakage from Cat 4 stockpile		M_gC4 =	0.00629 (mg/s)	
mass flux of liner leakage from LOSP		M_gC4LO =	0.02633 (mg/s)	
mass flux of seepage from Overburden (Storage)		M_gOS =	0.01725 (mg/s)	
mass flux of liner leakage from Cat 3LO sumps to SW-004		M_gC3LOs_0 =	0.00075 (mg/s)	
mass flux of liner leakage from Cat 4 sumps		M_gC4s =	0.00035 (mg/s)	
mass flux of liner leakage from LOSP sumps		M_gC4LOs =	0.00018 (mg/s)	
mass flux of seepage from Overburden Ponds - PW1		M_gOp1 =	0.00426 (mg/s)	
mass flux of leakage from Haul Road Pond - PW2		M_gHRp2 =	0.00001 (mg/s)	
mass flux of leakage from Haul Road Pond - PW4		M_gHRp4 =	0.00001 (mg/s)	
mass flux of leakage from RTH Pond - PW3		M_gRTHp =	0.00000 (mg/s)	
mass flux of liner leakage from WWTF pond		M_gWTFp =	0.01222 (mg/s)	
mass flux of surface water into SW-004A		M_s4A =	(mg/s)	
mass flux of ground water into SW-004A		M_g4A =	0.63633 (mg/s)	
mass flux of West Pit overflow		M_sms =	#N/A (mg/s)	
mass flux of liner leakage from Cat 1/2 stockpile		M_gC12 =	0.06655 (mg/s)	
mass flux of liner leakage from Cat 1/2 sumps		M_gC12s =	0.00001 (mg/s)	
mass flux of seepage from Overburden (Cat 1/2)		M_gO12 =	0.02456 (mg/s)	
mass flux of seepage from Overburden Pond - PW7		M_gOp7 =	#N/A (mg/s)	
mass flux of surface water into SW-005		M_s5 =	(mg/s)	
mass flux of ground water into SW-005		M_g5 =	1.04584 (mg/s)	
mass flux of surface water into USGS Gage		M_s6 =	(mg/s)	
mass flux of ground water into USGS Gage		M_g6 =	0.21654 (mg/s)	
mass flux of surface water into Colby Lake		M_scl =	(mg/s)	
mass flux of ground water into Colby Lake		M_gcl =	0.53905 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP		M_shl =	0.03642 (mg/s)	
			Low Flow	
Mass balance at each node	mass flux in river at SW-001	M_r1 =	0.1268 (mg/s)	
	mass flux in river at SW-002	M_r2 =	0.2456 (mg/s)	
	mass flux in river at SW-003	M_r3 =	0.6782 (mg/s)	
	mass flux in river at SW-004	M_r4 =	0.9529 (mg/s)	
	mass flux in river at SW-004A	M_r4A =	1.6804 (mg/s)	
	mass flux in river at SW-005	M_r5 =	2.7262 (mg/s)	
	mass flux in river at USGS Gage	M_r6 =	2.9428 (mg/s)	
mass flux into Colby Lake	M_cl =	3.5182 (mg/s)		
			Low Flow	
Convert mass flux to concentration	concentration in river at SW-001	C_r1 =	0.00380 (mg/L)	
	concentration in river at SW-002	C_r2 =	0.00604 (mg/L)	
	concentration in river at SW-003	C_r3 =	0.01545 (mg/L)	
	concentration in river at SW-004	C_r4 =	0.01717 (mg/L)	
	concentration in river at SW-004A	C_r4A =	0.01749 (mg/L)	
	concentration in river at SW-005	C_r5 =	0.01701 (mg/L)	
	concentration in river at USGS Gage	C_r6 =	0.01695 (mg/L)	
	concentration in Colby Lake	C_cl =	0.00368 (mg/L)	

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case Parameter	Year 20 Lead		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0005 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0005 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0005 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0005 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0005 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0005 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0005 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0005 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0005 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0002 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0011 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0011 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0011 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0011 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0011 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0011 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0011 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0011 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0457 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.0528 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0528 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0528 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0528 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0007 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0457 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.0528 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0528 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0528 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0528 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0007 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0011 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0011 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0011 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0510 (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00571 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.00425 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.00817 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00323 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00002 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.00963 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00146 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00036 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00000 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.04378 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.00795 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.07195 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.01490 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.03708 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00552 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	0.0100 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.0181 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.0214 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.0328 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.0846 (mg/s)
	mass flux in river at SW-005	M_r5 =	0.1565 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	0.1714 (mg/s)
	mass flux into Colby Lake	M_cl =	0.2140 (mg/s)
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C_r1 =	0.00030 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00045 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00049 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00059 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00088 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00098 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00099 (mg/L)
	concentration in Colby Lake	C_cl =	0.00057 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case	Year 20			
Parameter	Antimony			
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0015 (mg/L)	
	concentration of surface water into SW-002	C s2 =	0.0015 (mg/L)	
	concentration of surface water into SW-003	C s3 =	0.0015 (mg/L)	
	concentration of surface water into SW-004	C s4 =	0.0015 (mg/L)	
	concentration of surface water into SW-004A	C s4A =	0.0015 (mg/L)	
	concentration of surface water into SW-005	C s5 =	0.0015 (mg/L)	
	concentration of surface water into USGS Gage	C s6 =	0.0015 (mg/L)	
	concentration of surface water into Colby Lake	C scl =	0.0015 (mg/L)	
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0015 (mg/L)	
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0015 (mg/L)	
	concentration of West Pit overflow	C sms =	#N/A (mg/L)	
	concentration of ground water into SW-001	C g1 =	0.0015 (mg/L)	
	concentration of ground water into SW-002	C g2 =	0.0015 (mg/L)	
	concentration of ground water into SW-003	C g3 =	0.0015 (mg/L)	
	concentration of ground water into SW-004	C g4 =	0.0015 (mg/L)	
	concentration of ground water into SW-004A	C g4A =	0.0015 (mg/L)	
	concentration of ground water into SW-005	C g5 =	0.0015 (mg/L)	
	concentration of ground water into USGS Gage	C g6 =	0.0015 (mg/L)	
	concentration of ground water into Colby Lake	C gcl =	0.0015 (mg/L)	
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)	
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)	
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	0.0800 (mg/L)	
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	0.0800 (mg/L)	
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0800 (mg/L)	
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0800 (mg/L)	
	concentration of liner leakage from LOSP	C gC4LO =	0.0800 (mg/L)	
	concentration of seepage from Overburden (Storage)	C gOS =	0.0003 (mg/L)	
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	0.0004 (mg/L)	
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	0.0800 (mg/L)	
	concentration of liner leakage from Cat 3 sumps	C gC3s =	0.0800 (mg/L)	
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.0800 (mg/L)	
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0800 (mg/L)	
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0800 (mg/L)	
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0003 (mg/L)	
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)	
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0015 (mg/L)	
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0015 (mg/L)	
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0015 (mg/L)	
	concentration of liner leakage from WWTF ponc	C_gWTFp =	0.1089 (mg/L)	
				Low Flow
	Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	(mg/s)
mass flux of ground water into SW-001		M g1 =	0.00764 (mg/s)	
mass flux of surface discharges from upstream of PM-1		M sns =	0.04245 (mg/s)	
mass flux of surface water into SW-002		M s2 =	(mg/s)	
mass flux of ground water into SW-002		M g2 =	0.01094 (mg/s)	
mass flux of surface water into SW-003		M s3 =	(mg/s)	
mass flux of ground water into SW-003		M g3 =	0.00432 (mg/s)	
mass flux of seepage from East Pit to SW-003		M gep 003 =	#N/A (mg/s)	
mass flux of liner leakage from Cat 3 stockpile to SW-003		M gC3 003 =	0.00003 (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-003		M gC3LO 00 =	0.00001 (mg/s)	
mass flux of liner leakage from Cat 3 sumps to SW-003		M gC3s 003 =	0.00000 (mg/s)	
mass flux of surface water into SW-004		M s4 =	(mg/s)	
mass flux of ground water into SW-004		M g4 =	0.01290 (mg/s)	
mass flux of seepage from East Pit to SW-004		M gep 004 =	#N/A (mg/s)	
mass flux of seepage from West Pit		M gwp =	#N/A (mg/s)	
mass flux of liner leakage from Cat 3 stockpile to SW-004		M gC3 004 =	- (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-004		M gC3LO 00 =	0.00001 (mg/s)	
mass flux of liner leakage from Cat 4 stockpile		M gC4 =	0.00000 (mg/s)	
mass flux of liner leakage from LOSP		M gC4LO =	0.00001 (mg/s)	
mass flux of seepage from Overburden (Storage)		M gOS =	0.00065 (mg/s)	
mass flux of liner leakage from Cat 3LO sumps to SW-004		M gC3LOs 0 =	0.00000 (mg/s)	
mass flux of liner leakage from Cat 4 sumps		M gC4s =	0.00000 (mg/s)	
mass flux of liner leakage from LOSP sumps		M gC4LOs =	0.00000 (mg/s)	
mass flux of seepage from Overburden Ponds - PW1		M gOp1 =	0.00016 (mg/s)	
mass flux of leakage from Haul Road Pond - PW2		M gHRp2 =	0.00000 (mg/s)	
mass flux of leakage from Haul Road Pond - PW4		M gHRp4 =	0.00000 (mg/s)	
mass flux of leakage from RTH Pond - PW3		M gRTHp =	0.00000 (mg/s)	
mass flux of liner leakage from WWTF pond		M gWTFp =	0.00001 (mg/s)	
mass flux of surface water into SW-004A		M s4A =	- (mg/s)	
mass flux of ground water into SW-004A		M g4A =	0.05863 (mg/s)	
mass flux of West Pit overflow		M sms =	#N/A (mg/s)	
mass flux of liner leakage from Cat 1/2 stockpile		M gC12 =	0.01392 (mg/s)	
mass flux of liner leakage from Cat 1/2 sumps		M gC12s =	0.00000 (mg/s)	
mass flux of seepage from Overburden (Cat 1/2)		M gO12 =	0.00052 (mg/s)	
mass flux of seepage from Overburden Pond - PW7		M gOp7 =	#N/A (mg/s)	
mass flux of surface water into SW-005		M s5 =	- (mg/s)	
mass flux of ground water into SW-005		M g5 =	0.09636 (mg/s)	
mass flux of surface water into USGS Gage		M s6 =	- (mg/s)	
mass flux of ground water into USGS Gage		M g6 =	0.01995 (mg/s)	
mass flux of surface water into Colby Lake		M scl =	- (mg/s)	
mass flux of ground water into Colby Lake		M gcl =	0.04967 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP		M shl =	0.01656 (mg/s)	
			Low Flow	
Mass balance at each node	mass flux in river at SW-001	M r1 =	0.0501 (mg/s)	
	mass flux in river at SW-002	M r2 =	0.0610 (mg/s)	
	mass flux in river at SW-003	M r3 =	0.0654 (mg/s)	
	mass flux in river at SW-004	M r4 =	0.0791 (mg/s)	
	mass flux in river at SW-004A	M r4A =	0.1522 (mg/s)	
	mass flux in river at SW-005	M r5 =	0.2486 (mg/s)	
	mass flux in river at USGS Gage	M r6 =	0.2685 (mg/s)	
	mass flux into Colby Lake	M cl =	0.3347 (mg/s)	
Convert mass flux to concentration	concentration in river at SW-001	C r1 =	0.00150 (mg/L)	
	concentration in river at SW-002	C r2 =	0.00150 (mg/L)	
	concentration in river at SW-003	C r3 =	0.00149 (mg/L)	
	concentration in river at SW-004	C r4 =	0.00143 (mg/L)	
	concentration in river at SW-004A	C r4A =	0.00158 (mg/L)	
	concentration in river at SW-005	C r5 =	0.00155 (mg/L)	
	concentration in river at USGS Gage	C r6 =	0.00155 (mg/L)	
	concentration in Colby Lake	C cl =	0.00151 (mg/L)	

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case		Year 20	
Parameter		Selenium	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0005 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0005 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0005 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0005 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0005 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0005 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0005 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0005 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0005 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0005 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0019 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0019 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0019 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0019 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0019 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0019 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0019 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0019 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0029 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.0029 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0029 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0029 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0029 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0004 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0019 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0029 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.0029 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0029 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0029 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0029 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0004 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0019 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0019 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0019 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0130 (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00973 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.01415 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.01393 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00550 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.01642 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00096 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00024 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00000 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.07466 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.00050 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.00246 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.12270 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.02540 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.06324 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00552 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	0.0239 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.0378 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.0433 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.0609 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.1386 (mg/s)
	mass flux in river at SW-005	M_r5 =	0.2613 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	0.2867 (mg/s)
	mass flux into Colby Lake	M_cl =	0.3554 (mg/s)
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C_r1 =	0.00072 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00093 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00099 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00110 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00144 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00163 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00165 (mg/L)
	concentration in Colby Lake	C_cl =	0.00066 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case	Year 20				
Parameter	sulfate				
Input concentration data	concentration of surface water into SW-001	C s1 =	9.0000	(mg/L)	
	concentration of surface water into SW-002	C s2 =	9.0000	(mg/L)	
	concentration of surface water into SW-003	C s3 =	9.0000	(mg/L)	
	concentration of surface water into SW-004	C s4 =	9.0000	(mg/L)	
	concentration of surface water into SW-004A	C s4A =	9.0000	(mg/L)	
	concentration of surface water into SW-005	C s5 =	9.0000	(mg/L)	
	concentration of surface water into USGS Gage	C s6 =	9.0000	(mg/L)	
	concentration of surface water into Colby Lake	C scl =	9.0000	(mg/L)	
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	9.0000	(mg/L)	
	concentration of surface water discharges from upstream of PM-1	C sns =	22.0000	(mg/L)	
	concentration of West Pit overflow	C sms =	#N/A	(mg/L)	
	concentration of ground water into SW-001	C g1 =	16.1300	(mg/L)	
	concentration of ground water into SW-002	C g2 =	16.1300	(mg/L)	
	concentration of ground water into SW-003	C g3 =	16.1300	(mg/L)	
	concentration of ground water into SW-004	C g4 =	16.1300	(mg/L)	
	concentration of ground water into SW-004A	C g4A =	16.1300	(mg/L)	
	concentration of ground water into SW-005	C g5 =	16.1300	(mg/L)	
	concentration of ground water into USGS Gage	C g6 =	16.1300	(mg/L)	
	concentration of ground water into Colby Lake	C gcl =	16.1300	(mg/L)	
	concentration of ground water seepage from East Pit	C gep =	#N/A	(mg/L)	
	concentration of ground water seepage from West Pit	C gwp =	#N/A	(mg/L)	
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	2,128.7143	(mg/L)	
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	9,600.0000	(mg/L)	
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	9,600.0000	(mg/L)	
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	9,600.0000	(mg/L)	
	concentration of liner leakage from LOSP	C gC4LO =	9,600.0000	(mg/L)	
	concentration of seepage from Overburden (Storage)	C gOS =	35.1700	(mg/L)	
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	68.3000	(mg/L)	
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	2,128.7143	(mg/L)	
	concentration of liner leakage from Cat 3 sumps	C gC3s =	9,600.0000	(mg/L)	
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	9,600.0000	(mg/L)	
	concentration of liner leakage from Cat 4 sumps	C gC4s =	9,600.0000	(mg/L)	
	concentration of liner leakage from LOSP sumps	C gC4LOs =	9,600.0000	(mg/L)	
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	35.1700	(mg/L)	
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A	(mg/L)	
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	16.1300	(mg/L)	
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	16.1300	(mg/L)	
	concentration of leakage from RTH Pond - PW3	C gRTHp =	16.1300	(mg/L)	
	concentration of liner leakage from WWTF pond	C_gWTFp =	5,020.0000	(mg/L)	
	Low Flow				
	Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	-	(mg/s)
		mass flux of ground water into SW-001	M g1 =	82.16622	(mg/s)
		mass flux of surface discharges from upstream of PM-1	M sns =	622.60000	(mg/s)
mass flux of surface water into SW-002		M s2 =	-	(mg/s)	
mass flux of ground water into SW-002		M g2 =	117.67506	(mg/s)	
mass flux of surface water into SW-003		M s3 =	-	(mg/s)	
mass flux of ground water into SW-003		M g3 =	46.44826	(mg/s)	
mass flux of seepage from East Pit to SW-003		M gep_003 =	#N/A	(mg/s)	
mass flux of liner leakage from Cat 3 stockpile to SW-003		M gC3_003 =	4.01536	(mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-003		M gC3LO_00 =	0.83997	(mg/s)	
mass flux of liner leakage from Cat 3 sumps to SW-003		M gC3s_003 =	0.00505	(mg/s)	
mass flux of surface water into SW-004		M s4 =	-	(mg/s)	
mass flux of ground water into SW-004		M g4 =	138.69170	(mg/s)	
mass flux of seepage from East Pit to SW-004		M gep_004 =	#N/A	(mg/s)	
mass flux of seepage from West Pit		M gwp =	#N/A	(mg/s)	
mass flux of liner leakage from Cat 3 stockpile to SW-004		M gC3_004 =	-	(mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-004		M gC3LO_00 =	0.83997	(mg/s)	
mass flux of liner leakage from Cat 4 stockpile		M gC4 =	0.07930	(mg/s)	
mass flux of liner leakage from LOSP		M gC4LO =	1.26309	(mg/s)	
mass flux of seepage from Overburden (Storage)		M gOS =	76.11262	(mg/s)	
mass flux of liner leakage from Cat 3LO sumps to SW-004		M gC3LOs_0 =	0.00942	(mg/s)	
mass flux of liner leakage from Cat 4 sumps		M gC4s =	0.00438	(mg/s)	
mass flux of liner leakage from LOSP sumps		M gC4LOs =	0.00875	(mg/s)	
mass flux of seepage from Overburden Ponds - PW1		M gOp1 =	18.81988	(mg/s)	
mass flux of leakage from Haul Road Pond - PW2		M gHRp2 =	0.00614	(mg/s)	
mass flux of leakage from Haul Road Pond - PW4		M gHRp4 =	0.01315	(mg/s)	
mass flux of leakage from RTH Pond - PW3		M gRTHp =	0.00000	(mg/s)	
mass flux of liner leakage from WWTF pond		M_gWTFp =	0.34849	(mg/s)	
mass flux of surface water into SW-004A		M s4A =	-	(mg/s)	
mass flux of ground water into SW-004A		M g4A =	630.46901	(mg/s)	
mass flux of West Pit overflow		M sms =	#N/A	(mg/s)	
mass flux of liner leakage from Cat 1/2 stockpile		M gC12 =	370.47930	(mg/s)	
mass flux of liner leakage from Cat 1/2 sumps		M gC12s =	0.04665	(mg/s)	
mass flux of seepage from Overburden (Cat 1/2)		M gO12 =	88.29738	(mg/s)	
mass flux of seepage from Overburden Pond - PW7		M gOp7 =	#N/A	(mg/s)	
mass flux of surface water into SW-005		M s5 =	-	(mg/s)	
mass flux of ground water into SW-005		M g5 =	1,036.20733	(mg/s)	
mass flux of surface water into USGS Gage		M s6 =	-	(mg/s)	
mass flux of ground water into USGS Gage		M g6 =	214.54513	(mg/s)	
mass flux of surface water into Colby Lake		M scl =	-	(mg/s)	
mass flux of ground water into Colby Lake		M gcl =	534.08043	(mg/s)	
mass flux of surface water from Hoyt Lakes WWTP		M shl =	99.33300	(mg/s)	
Low Flow					
Mass balance at each node	mass flux in river at SW-001	M r1 =	704.7662	(mg/s)	
	mass flux in river at SW-002	M r2 =	822.4413	(mg/s)	
	mass flux in river at SW-003	M r3 =	873.7499	(mg/s)	
	mass flux in river at SW-004	M r4 =	1,109.9518	(mg/s)	
	mass flux in river at SW-004A	M r4A =	2,199.2442	(mg/s)	
	mass flux in river at SW-005	M r5 =	3,235.4515	(mg/s)	
	mass flux in river at USGS Gage	M r6 =	3,449.9966	(mg/s)	
	mass flux into Colby Lake	M cl =	4,063.4101	(mg/s)	
Low Flow					
Convert mass flux to concentration	concentration in river at SW-001	C r1 =	21.10458	(mg/L)	
	concentration in river at SW-002	C r2 =	20.21266	(mg/L)	
	concentration in river at SW-003	C r3 =	19.90995	(mg/L)	
	concentration in river at SW-004	C r4 =	19.99923	(mg/L)	
	concentration in river at SW-004A	C r4A =	22.89608	(mg/L)	
	concentration in river at SW-005	C r5 =	20.18444	(mg/L)	
	concentration in river at USGS Gage	C r6 =	19.87379	(mg/L)	
	concentration in Colby Lake	C cl =	10.42352	(mg/L)	



Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case	Year 20		
Parameter	Thallium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0004 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0004 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0004 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0004 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0004 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0004 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0004 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0004 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0004 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0003 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0000 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0000 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0000 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0000 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0000 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0000 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0000 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0000 (mg/L)
	concentration of ground water seepage from East Pit	C_ggp =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0000 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.0001 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0001 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0001 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0001 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0000 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0000 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.0001 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_g3LOs =	0.0001 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0001 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0001 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0000 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0000 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0000 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0000 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0088 (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00002 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.00809 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.00003 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00001 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_ggp_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.00003 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_ggp_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00009 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00002 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00000 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.00016 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.00026 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.00005 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.00013 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00441 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	0.0081 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.0081 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.0082 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.0083 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.0085 (mg/s)
	mass flux in river at SW-005	M_r5 =	0.0087 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	0.0088 (mg/s)
	mass flux into Colby Lake	M_cl =	0.0133 (mg/s)
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C_r1 =	0.00024 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00020 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00019 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00015 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00009 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00005 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00005 (mg/L)
	concentration in Colby Lake	C_cl =	0.00035 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case		Year 20	
Parameter		Vanadium	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0009 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0009 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0009 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0009 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0009 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0009 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0009 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0009 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0009 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0043 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0043 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0043 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0043 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0043 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0043 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0043 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0043 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0043 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	1.4099 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	15.9063 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	21.2932 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	6.1333 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0407 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0017 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0014 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	1.4099 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	15.9063 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	21.2932 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	6.1333 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0407 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0017 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0043 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0043 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0043 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	9.6830 (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.02190 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.12169 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.03137 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.01238 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00665 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00186 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00001 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.03697 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00186 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00005 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00374 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00002 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00093 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00067 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.16807 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.24538 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00003 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.00181 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.27624 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.05719 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.14238 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00993 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	0.1438 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.1760 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.1969 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.2401 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.6554 (mg/s)
	mass flux in river at SW-005	M_r5 =	0.9317 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	0.9889 (mg/s)
	mass flux into Colby Lake	M_cl =	1.1412 (mg/s)
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C_r1 =	0.00430 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00430 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00446 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00433 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00682 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00581 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00570 (mg/L)
	concentration in Colby Lake	C_cl =	0.00153 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case		Year 20	
Parameter		Zinc	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0160 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0160 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0160 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0160 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0160 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0160 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0160 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0160 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0620 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0073 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0275 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0275 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0275 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0275 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0275 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0275 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0275 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0275 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0900 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	26.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	26.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	26.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	26.0000 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0046 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0030 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0900 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	26.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	26.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	26.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	26.0000 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0046 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0275 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0275 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0275 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	10.3000 (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.14009 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.20744 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.20062 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.07919 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.01087 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00227 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00001 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.23646 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00227 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00021 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00342 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00987 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00003 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00001 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00002 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00244 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00001 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00002 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00072 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	1.07489 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.01566 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.00388 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	1.76663 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.36578 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.91055 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.68429 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	0.3475 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.5481 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.6405 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.8960 (mg/s)
	mass flux in river at SW-004A	M_r4A =	1.9904 (mg/s)
	mass flux in river at SW-005	M_r5 =	3.7571 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	4.1228 (mg/s)
	mass flux into Colby Lake	M_cl =	5.7177 (mg/s)
	Low Flow		
	concentration in river at SW-001	C_r1 =	0.01041 (mg/L)
	concentration in river at SW-002	C_r2 =	0.01347 (mg/L)
	concentration in river at SW-003	C_r3 =	0.01459 (mg/L)
	concentration in river at SW-004	C_r4 =	0.01614 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.02072 (mg/L)
	concentration in river at SW-005	C_r5 =	0.02344 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.02375 (mg/L)
	concentration in Colby Lake	C_cl =	0.01749 (mg/L)

## Partridge River Mass-Balance Model - Mine Site - Proposed Action

### FLOWS

Case Flow	Year 20 Average Flow Conditions (mean annual)			
Total flow in Partridge River	flow in river at SW-001	Q_r1_M =	5.70	(cfs)
	flow in river at SW-002	Q_r2_M =	11.27	(cfs)
	flow in river at SW-003	Q_r3_M =	12.94	(cfs)
	flow in river at SW-004	Q_r4_M =	19.07	(cfs)
	flow in river at SW-004A	Q_r4a_M =	43.68	(cfs)
	flow in river at SW-005	Q_r5_M =	82.07	(cfs)
	flow in river at USGS Gage	Q_r6_M =	86.42	(cfs)
	total flow into Colby Lake	Q_cl_M =	111.54	(cfs)
	flow check	Q_ck_M =	111.54	(cfs)
input flow data	surface water flow into SW-001	Q_s1_M =	4.52	(cfs)
	surface water flow into SW-002	Q_s2_M =	5.32	(cfs)
	surface water flow into SW-003	Q_s3_M =	1.55	(cfs)
	surface water flow into SW-004	Q_s4_M =	5.72	(cfs)
	surface water flow into SW-004A	Q_s4a_M =	23.16	(cfs)
	surface water flow into SW-005	Q_s5_M =	36.12	(cfs)
	surface water flow into USGS Gage	Q_s6_M =	3.88	(cfs)
	surface water flow into Colby Lake	Q_scl_M =	23.56	(cfs)
	surface water inflow from Hoyt Lakes WWTP	Q_shl_M =	0.39	(cfs)
	surface water inflow from discharges upstream of PM-1	Q_sns_M =	1.00	(cfs)
	West Pit overflow	Q_sms_M =	-	(cfs)
	ground water flow into SW-001	Q_g1_M =	0.18	(cfs)
	ground water flow into SW-002	Q_g2_M =	0.26	(cfs)
	ground water flow into SW-003	Q_g3_M =	0.10	(cfs)
	ground water flow into SW-004	Q_g4_M =	0.30	(cfs)
	ground water flow into SW-004A	Q_g4a_M =	1.38	(cfs)
	ground water flow into SW-005	Q_g5_M =	2.27	(cfs)
	ground water flow into USGS Gage	Q_g6_M =	0.47	(cfs)
	ground water flow into Colby Lake	Q_gcl_M =	1.17	(cfs)
	ground water seepage from East Pit to SW-003	Q_gep_003_M =	0.0112	(cfs)
	ground water seepage from East Pit to SW-004	Q_gep_004_M =	0.0112	(cfs)
	ground water seepage from West Pit	Q_gwp_M =	-	(cfs)
	ground water liner leakage from Cat 1/2 stockpile	Q_gC12_M =	0.0084	(cfs)
	ground water liner leakage from Cat 3 stockpile to SW-003	Q_gC3_003_M =	0.0000	(cfs)
	ground water liner leakage from Cat 3 stockpile to SW-004	Q_gC3_004_M =	-	(cfs)
	ground water liner leakage from Cat 3LO stockpile to SW-003	Q_gC3LO_003_M =	0.0000	(cfs)
	ground water liner leakage from Cat 3LO stockpile to SW-004	Q_gC3LO_004_M =	0.0000	(cfs)
	ground water liner leakage from Cat 4 stockpile	Q_gC4_M =	0.0000	(cfs)
	ground water liner leakage from LO SP	Q_gC4LO_M =	0.0000	(cfs)
	ground water seepage from Overburden Storage	Q_gOS_M =	0.0765	(cfs)
	ground water seepage from Overburden (Cat 1/2)	Q_gO12_M =	0.0628	(cfs)
	ground water liner leakage from Cat 1/2 sumps	Q_gC12s_M =	0.0000	(cfs)
	ground water liner leakage from Cat 3 sumps	Q_gC3s_M =	0.0000	(cfs)
	ground water liner leakage from Cat 3LO sumps	Q_gC3LOs_M =	0.0000	(cfs)
	ground water liner leakage from Cat 4 sumps	Q_gC4s_M =	0.0000	(cfs)
	ground water liner leakage from LO SP sumps	Q_gC4LOs_M =	0.0000	(cfs)
	ground water seepage from Overburden pond - PW1	Q_gOp1_M =	0.0189	(cfs)
	ground water seepage from Overburden pond - PW7	Q_gOp7_M =	-	(cfs)
	ground water leakage from Haul Road pond - PW2	Q_gHRp2_M =	0.0000	(cfs)
	ground water leakage from Haul Road pond - PW4	Q_gHRp4_M =	0.0000	(cfs)
	ground water leakage from RTH pond - PW3	Q_gRTHp_M =	0.0000	(cfs)
	ground water liner leakage from WWTF pond	Q_gWTFp_M =	0.000002	(cfs)

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case	Year 20		
Parameter	Silver		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0001 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0001 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0001 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0001 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0001 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0001 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0001 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0001 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0001 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0001 (mg/L)
	concentration of West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0006 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0006 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0006 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0006 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0006 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0006 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0006 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0006 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	0.0007 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	0.0007 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0007 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0007 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.0007 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	- (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	0.0007 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C gC3s =	0.0007 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.0007 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0007 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0007 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	- (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0006 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0006 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0006 (mg/L)
	concentration of liner leakage from WWTF pond	C gWTFp =	0.0053 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	0.01279 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.00280 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.00340 (mg/s)
	mass flux of surface water into SW-002	M s2 =	0.01504 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.00401 (mg/s)
	mass flux of surface water into SW-003	M s3 =	0.00440 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.00158 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep 003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M gC3 003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO 003 =	0.00000 (mg/s)
	mass flux of liner leakage from cat 3 sumps to SW-003	M gC3s 003 =	0.00000 (mg/s)
mass flux of surface water into SW-004	M s4 =	0.01618 (mg/s)	
mass flux of ground water into SW-004	M g4 =	0.00473 (mg/s)	
mass flux of seepage from East Pit to SW-004	M gep 004 =	#N/A (mg/s)	
mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)	
mass flux of liner leakage from Cat 3 stockpile to SW-004	M gC3 004 =	- (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO 004 =	0.00000 (mg/s)	
mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00000 (mg/s)	
mass flux of liner leakage from LOSP	M gC4LO =	0.00000 (mg/s)	
mass flux of seepage from Overburden (Storage)	M gOS =	- (mg/s)	
mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs 004 =	0.00000 (mg/s)	
mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)	
mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)	
mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	- (mg/s)	
mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00000 (mg/s)	
mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00000 (mg/s)	
mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)	
mass flux of liner leakage from WWTF pond	M gWTFp =	0.00000 (mg/s)	
mass flux of surface water into SW-004A	M s4A =	0.06555 (mg/s)	
mass flux of ground water into SW-004A	M g4A =	0.02150 (mg/s)	
mass flux of West Pit overflow	M sms =	#N/A (mg/s)	
mass flux of liner leakage from Cat 1/2 stockpile	M gC12 =	0.00017 (mg/s)	
mass flux of liner leakage from Cat 1/2 sumps	M gC12s =	0.00000 (mg/s)	
mass flux of seepage from Overburden (Cat 1/2)	M gO12 =	- (mg/s)	
mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)	
mass flux of surface water into SW-005	M s5 =	0.10221 (mg/s)	
mass flux of ground water into SW-005	M g5 =	0.03533 (mg/s)	
mass flux of surface water into USGS Gage	M s6 =	0.01098 (mg/s)	
mass flux of ground water into USGS Gage	M g6 =	0.00732 (mg/s)	
mass flux of surface water into Colby Lake	M scl =	0.06667 (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	0.01821 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.00110 (mg/s)	
Average Flow			
Mass balance at each node	mass flux in river at SW-001	M r1 =	0.0190 (mg/s)
	mass flux in river at SW-002	M r2 =	0.0380 (mg/s)
	mass flux in river at SW-003	M r3 =	0.0440 (mg/s)
	mass flux in river at SW-004	M r4 =	0.0649 (mg/s)
	mass flux in river at SW-004A	M r4A =	0.1522 (mg/s)
	mass flux in river at SW-005	M r5 =	0.2897 (mg/s)
	mass flux in river at USGS Gage	M r6 =	0.3080 (mg/s)
mass flux into Colby Lake	M cl =	0.3940 (mg/s)	
Average Flow			
Convert mass flux to concentration	concentration in river at SW-001	C r1 =	0.00012 (mg/L)
	concentration in river at SW-002	C r2 =	0.00012 (mg/L)
	concentration in river at SW-003	C r3 =	0.00012 (mg/L)
	concentration in river at SW-004	C r4 =	0.00012 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00012 (mg/L)
	concentration in river at SW-005	C r5 =	0.00012 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00013 (mg/L)
	concentration in Colby Lake	C cl =	0.00012 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case		Year 20	
Parameter		Aluminum	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0700 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0700 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0700 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0700 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0700 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0700 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0700 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0700 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0700 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0173 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.1250 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.1250 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.1250 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.1250 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.1250 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.1250 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.1250 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.1250 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	1.6800 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	83.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	83.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	83.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	83.0000 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.4106 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.1400 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	1.6800 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	83.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	83.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	83.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	83.0000 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.4106 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.1250 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.1250 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.1250 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	33.9000 (mg/L)
		Average Flow	
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	8.95493 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.63675 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.48959 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	10.53129 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.91193 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	3.07678 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.35995 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.06887 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.01430 (mg/s)
	mass flux of liner leakage from cat 3 sumps to SW-003	M_gC3s_003 =	0.00004 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	11.32381 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	1.07480 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.01430 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00069 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.01786 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.88859 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00008 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00004 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00008 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.21972 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00005 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00010 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00235 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	45.88627 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	4.88584 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.40169 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00004 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.24865 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	71.54827 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	8.03013 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	7.68709 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	1.66263 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	46.67236 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	4.13888 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.77259 (mg/s)
		Average Flow	
Mass balance at each node	mass flux in river at SW-001	M_r1 =	10.0813 (mg/s)
	mass flux in river at SW-002	M_r2 =	21.5245 (mg/s)
	mass flux in river at SW-003	M_r3 =	25.0444 (mg/s)
	mass flux in river at SW-004	M_r4 =	38.5869 (mg/s)
	mass flux in river at SW-004A	M_r4A =	90.0094 (mg/s)
	mass flux in river at SW-005	M_r5 =	169.5878 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	178.9375 (mg/s)
	mass flux into Colby Lake	M_cl =	230.5213 (mg/s)
		Average Flow	
Convert mass flux to concentration	concentration in river at SW-001	C_r1 =	0.06249 (mg/L)
	concentration in river at SW-002	C_r2 =	0.06746 (mg/L)
	concentration in river at SW-003	C_r3 =	0.06839 (mg/L)
	concentration in river at SW-004	C_r4 =	0.07151 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.07281 (mg/L)
	concentration in river at SW-005	C_r5 =	0.07302 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.07316 (mg/L)
	concentration in Colby Lake	C_cl =	0.07303 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case		Year 20	
Parameter		Arsenic	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0021 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0021 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0021 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0021 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0021 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0021 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0021 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0021 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0021 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0065 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0022 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0022 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0022 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0022 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0022 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0022 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0022 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0022 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.7100 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.7100 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.7100 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.7100 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.1320 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0016 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0027 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.7100 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.7100 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.7100 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.7100 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.1320 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0016 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0022 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0022 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0022 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.5600 (mg/L)
		Average Flow	
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	0.26993 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.01100 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.18395 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	0.31744 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.01576 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.09274 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00622 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00059 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00012 (mg/s)
	mass flux of liner leakage from cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.34133 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.01857 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00012 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00001 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00003 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00338 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00083 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00004 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	1.38314 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.08443 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.16976 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00002 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.00480 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	2.15667 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.13876 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.23171 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.02873 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	1.40684 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.07152 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.02329 (mg/s)
		Average Flow	
Mass balance at each node	mass flux in river at SW-001	M_r1 =	0.4649 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.7981 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.8978 (mg/s)
	mass flux in river at SW-004	M_r4 =	1.2621 (mg/s)
	mass flux in river at SW-004A	M_r4A =	2.9042 (mg/s)
	mass flux in river at SW-005	M_r5 =	5.1996 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	5.4601 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	6.9617 (mg/s)
			Average Flow
	concentration in river at SW-001	C_r1 =	0.00288 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00250 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00245 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00234 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00235 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00224 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00223 (mg/L)
	concentration in Colby Lake	C_cl =	0.00221 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case	Year 20		
Parameter	Boron		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0450 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0450 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0450 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0450 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0450 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0450 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0450 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0450 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0450 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0960 (mg/L)
	concentration of West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0870 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0870 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0870 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0870 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0870 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0870 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0870 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0870 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	0.7600 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	0.7600 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.7600 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.7600 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.7600 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0622 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	0.0370 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	0.7600 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C gC3s =	0.7600 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.7600 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.7600 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.7600 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0622 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0870 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0870 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0870 (mg/L)
	concentration of liner leakage from WWTF ponc	C gWTFp =	1.1000 (mg/L)
			Average Flow
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	5.75674 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.44318 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	2.71680 (mg/s)
	mass flux of surface water into SW-002	M s2 =	6.77012 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.63470 (mg/s)
	mass flux of surface water into SW-003	M s3 =	1.97793 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.25053 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M gC3_003 =	0.00063 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00013 (mg/s)
	mass flux of liner leakage from cat 3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	7.27959 (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.74806 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00013 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00001 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00016 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.13461 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.03328 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00003 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00007 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00008 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	29.49832 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	3.40055 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M gC12 =	0.18172 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M gC12s =	0.00002 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M gO12 =	0.06572 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	45.99532 (mg/s)
	mass flux of ground water into SW-005	M g5 =	5.58897 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	4.94170 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	1.15719 (mg/s)
mass flux of surface water into Colby Lake	M scl =	30.00366 (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	2.88066 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.49667 (mg/s)	
			Average Flow
Mass balance at each node	mass flux in river at SW-001	M r1 =	8.9167 (mg/s)
	mass flux in river at SW-002	M r2 =	16.3215 (mg/s)
	mass flux in river at SW-003	M r3 =	18.5508 (mg/s)
	mass flux in river at SW-004	M r4 =	26.7468 (mg/s)
	mass flux in river at SW-004A	M r4A =	59.8931 (mg/s)
	mass flux in river at SW-005	M r5 =	111.4774 (mg/s)
	mass flux in river at USGS Gage	M r6 =	117.5763 (mg/s)
mass flux into Colby Lake	M cl =	150.9572 (mg/s)	
			Average Flow
Convert mass flux to concentration	concentration in river at SW-001	C r1 =	0.05527 (mg/L)
	concentration in river at SW-002	C r2 =	0.05115 (mg/L)
	concentration in river at SW-003	C r3 =	0.05066 (mg/L)
	concentration in river at SW-004	C r4 =	0.04957 (mg/L)
	concentration in river at SW-004A	C r4A =	0.04845 (mg/L)
	concentration in river at SW-005	C r5 =	0.04800 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.04807 (mg/L)
	concentration in Colby Lake	C cl =	0.04782 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case	Year 20				
Parameter	Barium				
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0077	(mg/L)	
	concentration of surface water into SW-002	C_s2 =	0.0077	(mg/L)	
	concentration of surface water into SW-003	C_s3 =	0.0077	(mg/L)	
	concentration of surface water into SW-004	C_s4 =	0.0077	(mg/L)	
	concentration of surface water into SW-004A	C_s4A =	0.0077	(mg/L)	
	concentration of surface water into SW-005	C_s5 =	0.0077	(mg/L)	
	concentration of surface water into USGS Gage	C_s6 =	0.0077	(mg/L)	
	concentration of surface water into Colby Lake	C_scl =	0.0077	(mg/L)	
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0077	(mg/L)	
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0050	(mg/L)	
	concentration of West Pit overflow	C_sms =	#N/A	(mg/L)	
	concentration of ground water into SW-001	C_g1 =	0.0219	(mg/L)	
	concentration of ground water into SW-002	C_g2 =	0.0219	(mg/L)	
	concentration of ground water into SW-003	C_g3 =	0.0219	(mg/L)	
	concentration of ground water into SW-004	C_g4 =	0.0219	(mg/L)	
	concentration of ground water into SW-004A	C_g4A =	0.0219	(mg/L)	
	concentration of ground water into SW-005	C_g5 =	0.0219	(mg/L)	
	concentration of ground water into USGS Gage	C_g6 =	0.0219	(mg/L)	
	concentration of ground water into Colby Lake	C_gcl =	0.0219	(mg/L)	
	concentration of ground water seepage from East Pit	C_ggp =	#N/A	(mg/L)	
	concentration of ground water seepage from West Pit	C_gwp =	#N/A	(mg/L)	
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.1900	(mg/L)	
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.1900	(mg/L)	
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.1900	(mg/L)	
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.1900	(mg/L)	
	concentration of liner leakage from LOSP	C_gC4LO =	0.1900	(mg/L)	
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0168	(mg/L)	
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0140	(mg/L)	
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.1900	(mg/L)	
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.1900	(mg/L)	
	concentration of liner leakage from Cat 3LO sumps	C_g3LOs =	0.1900	(mg/L)	
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.1900	(mg/L)	
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.1900	(mg/L)	
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0168	(mg/L)	
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A	(mg/L)	
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0219	(mg/L)	
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0219	(mg/L)	
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0219	(mg/L)	
	concentration of liner leakage from WWTF ponc	C_gWTFp =	0.2800	(mg/L)	
	Average Flow				
	Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	0.98248	(mg/s)
		mass flux of ground water into SW-001	M_g1 =	0.11166	(mg/s)
mass flux of surface discharges from upstream of PM-1		M_sns =	0.14150	(mg/s)	
mass flux of surface water into SW-002		M_s2 =	1.15543	(mg/s)	
mass flux of ground water into SW-002		M_g2 =	0.15992	(mg/s)	
mass flux of surface water into SW-003		M_s3 =	0.33757	(mg/s)	
mass flux of ground water into SW-003		M_g3 =	0.06312	(mg/s)	
mass flux of seepage from East Pit to SW-003		M_ggp_003 =	#N/A	(mg/s)	
mass flux of liner leakage from Cat 3 stockpile to SW-003		M_gC3_003 =	0.00016	(mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-003		M_gC3LO_00	0.00003	(mg/s)	
mass flux of liner leakage from cat 3 sumps to SW-003		M_gC3s_003	0.00000	(mg/s)	
mass flux of surface water into SW-004		M_s4 =	1.24238	(mg/s)	
mass flux of ground water into SW-004		M_g4 =	0.18848	(mg/s)	
mass flux of seepage from East Pit to SW-004		M_ggp_004 =	#N/A	(mg/s)	
mass flux of seepage from West Pit		M_gwp =	#N/A	(mg/s)	
mass flux of liner leakage from Cat 3 stockpile to SW-004		M_gC3_004 =	-	(mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-004		M_gC3LO_00	0.00003	(mg/s)	
mass flux of liner leakage from Cat 4 stockpile		M_gC4 =	0.00000	(mg/s)	
mass flux of liner leakage from LOSP		M_gC4LO =	0.00004	(mg/s)	
mass flux of seepage from Overburden (Storage)		M_gOS =	0.03643	(mg/s)	
mass flux of liner leakage from Cat 3LO sumps to SW-004		M_gC3LOs_0	0.00000	(mg/s)	
mass flux of liner leakage from Cat 4 sumps		M_gC4s =	0.00000	(mg/s)	
mass flux of liner leakage from LOSP sumps		M_gC4LOs =	0.00000	(mg/s)	
mass flux of seepage from Overburden Ponds - PW1		M_gOp1 =	0.00901	(mg/s)	
mass flux of leakage from Haul Road Pond - PW2		M_gHRp2 =	0.00001	(mg/s)	
mass flux of leakage from Haul Road Pond - PW4		M_gHRp4 =	0.00002	(mg/s)	
mass flux of leakage from RTH Pond - PW3		M_gRTHp =	0.00000	(mg/s)	
mass flux of liner leakage from WWTF pond		M_gWTFp =	0.00002	(mg/s)	
mass flux of surface water into SW-004A		M_s4A =	5.03438	(mg/s)	
mass flux of ground water into SW-004A		M_g4A =	0.85678	(mg/s)	
mass flux of West Pit overflow		M_sms =	#N/A	(mg/s)	
mass flux of liner leakage from Cat 1/2 stockpile		M_gC12 =	0.04543	(mg/s)	
mass flux of liner leakage from Cat 1/2 sumps		M_gC12s =	0.00000	(mg/s)	
mass flux of seepage from Overburden (Cat 1/2)		M_gO12 =	0.02487	(mg/s)	
mass flux of seepage from Overburden Pond - PW7		M_gOp7 =	#N/A	(mg/s)	
mass flux of surface water into SW-005		M_s5 =	7.84987	(mg/s)	
mass flux of ground water into SW-005		M_g5 =	1.40816	(mg/s)	
mass flux of surface water into USGS Gage		M_s6 =	0.84338	(mg/s)	
mass flux of ground water into USGS Gage		M_g6 =	0.29156	(mg/s)	
mass flux of surface water into Colby Lake		M_scl =	5.12062	(mg/s)	
mass flux of ground water into Colby Lake		M_gcl =	0.72579	(mg/s)	
mass flux of surface water from Hoyt Lakes WWTP		M_shl =	0.08476	(mg/s)	
Mass balance at each node	Average Flow				
	mass flux in river at SW-001	M_r1 =	1.2358	(mg/s)	
	mass flux in river at SW-002	M_r2 =	2.5510	(mg/s)	
	mass flux in river at SW-003	M_r3 =	2.9519	(mg/s)	
	mass flux in river at SW-004	M_r4 =	4.4283	(mg/s)	
	mass flux in river at SW-004A	M_r4A =	10.3897	(mg/s)	
	mass flux in river at SW-005	M_r5 =	19.6478	(mg/s)	
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	20.7827	(mg/s)	
	mass flux into Colby Lake	M_cl =	26.7139	(mg/s)	
Average Flow					
Convert mass flux to concentration	concentration in river at SW-001	C_r1 =	0.00766	(mg/L)	
	concentration in river at SW-002	C_r2 =	0.00800	(mg/L)	
	concentration in river at SW-003	C_r3 =	0.00806	(mg/L)	
	concentration in river at SW-004	C_r4 =	0.00821	(mg/L)	
	concentration in river at SW-004A	C_r4A =	0.00840	(mg/L)	
	concentration in river at SW-005	C_r5 =	0.00846	(mg/L)	
	concentration in river at USGS Gage	C_r6 =	0.00850	(mg/L)	
	concentration in Colby Lake	C_cl =	0.00846	(mg/L)	

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case		Year 20	
Parameter		Beryllium	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0001 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0001 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0001 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0001 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0001 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0001 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0001 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0001 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0001 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0001 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0001 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0001 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0001 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0001 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0001 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0001 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0001 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0001 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.0023 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0023 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0023 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0023 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	- (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.0023 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0023 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0023 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0023 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	- (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0001 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0001 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0001 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0026 (mg/L)
		Average Flow	
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	0.01279 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00074 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.00283 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	0.01504 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.00106 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.00440 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00042 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00000 (mg/s)
	mass flux of liner leakage from cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.01618 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.00125 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	- (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00000 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	0.06555 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.00567 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.00005 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	0.10221 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.00931 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.01098 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.00193 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	0.06667 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.00480 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00110 (mg/s)
		Average Flow	
Mass balance at each node	mass flux in river at SW-001	M_r1 =	0.0164 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.0325 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.0373 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.0547 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.1260 (mg/s)
	mass flux in river at SW-005	M_r5 =	0.2375 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	0.2504 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	0.3230 (mg/s)
			Average Flow
	concentration in river at SW-001	C_r1 =	0.00010 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00010 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00010 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00010 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00010 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00010 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00010 (mg/L)
	concentration in Colby Lake	C_cl =	0.00010 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case Parameter	Year 20 Calcium			
Input concentration data	concentration of surface water into SW-001	C s1 =	17.0000 (mg/L)	
	concentration of surface water into SW-002	C s2 =	17.0000 (mg/L)	
	concentration of surface water into SW-003	C s3 =	17.0000 (mg/L)	
	concentration of surface water into SW-004	C s4 =	17.0000 (mg/L)	
	concentration of surface water into SW-004A	C s4A =	17.0000 (mg/L)	
	concentration of surface water into SW-005	C s5 =	17.0000 (mg/L)	
	concentration of surface water into USGS Gage	C s6 =	17.0000 (mg/L)	
	concentration of surface water into Colby Lake	C scl =	17.0000 (mg/L)	
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	17.0000 (mg/L)	
	concentration of surface water discharges from upstream of PM-1	C sns =	24.5000 (mg/L)	
	concentration of West Pit overflow	C sms =	#N/A (mg/L)	
	concentration of ground water into SW-001	C g1 =	14.7900 (mg/L)	
	concentration of ground water into SW-002	C g2 =	14.7900 (mg/L)	
	concentration of ground water into SW-003	C g3 =	14.7900 (mg/L)	
	concentration of ground water into SW-004	C g4 =	14.7900 (mg/L)	
	concentration of ground water into SW-004A	C g4A =	14.7900 (mg/L)	
	concentration of ground water into SW-005	C g5 =	14.7900 (mg/L)	
	concentration of ground water into USGS Gage	C g6 =	14.7900 (mg/L)	
	concentration of ground water into Colby Lake	C gcl =	14.7900 (mg/L)	
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)	
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)	
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	435.9790 (mg/L)	
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	480.0000 (mg/L)	
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	480.0000 (mg/L)	
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	480.0000 (mg/L)	
	concentration of liner leakage from LOSP	C gC4LO =	268.6021 (mg/L)	
	concentration of seepage from Overburden (Storage)	C gOS =	9.3700 (mg/L)	
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	15.8000 (mg/L)	
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	435.9790 (mg/L)	
	concentration of liner leakage from Cat 3 sumps	C gC3s =	480.0000 (mg/L)	
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	480.0000 (mg/L)	
	concentration of liner leakage from Cat 4 sumps	C gC4s =	480.0000 (mg/L)	
	concentration of liner leakage from LOSP sumps	C gC4LOs =	268.6021 (mg/L)	
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	9.3700 (mg/L)	
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)	
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	14.7900 (mg/L)	
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	14.7900 (mg/L)	
	concentration of leakage from RTH Pond - PW3	C gRTHp =	14.7900 (mg/L)	
	concentration of liner leakage from WWTF ponc	C_gWTFp =	541.0000 (mg/L)	
	Convert concentration to mass flux	Average Flow		
		mass flux of surface water into SW-001	M s1 =	2,174.76906 (mg/s)
		mass flux of ground water into SW-001	M g1 =	75.34026 (mg/s)
mass flux of surface discharges from upstream of PM-1		M sns =	693.35000 (mg/s)	
mass flux of surface water into SW-002		M s2 =	2,557.59996 (mg/s)	
mass flux of ground water into SW-002		M g2 =	107.89920 (mg/s)	
mass flux of surface water into SW-003		M s3 =	747.21712 (mg/s)	
mass flux of ground water into SW-003		M g3 =	42.58957 (mg/s)	
mass flux of seepage from East Pit to SW-003		M gep 003 =	#N/A (mg/s)	
mass flux of liner leakage from Cat 3 stockpile to SW-003		M gC3_003 =	0.39827 (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-003		M gC3LO_00 =	0.08270 (mg/s)	
mass flux of liner leakage from cat 3 sumps to SW-003		M gC3s_003 =	0.00025 (mg/s)	
mass flux of surface water into SW-004		M s4 =	2,750.06839 (mg/s)	
mass flux of ground water into SW-004		M g4 =	127.16988 (mg/s)	
mass flux of seepage from East Pit to SW-004		M gep 004 =	#N/A (mg/s)	
mass flux of seepage from West Pit		M gwp =	#N/A (mg/s)	
mass flux of liner leakage from Cat 3 stockpile to SW-004		M gC3_004 =	- (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-004		M gC3LO_00 =	0.08270 (mg/s)	
mass flux of liner leakage from Cat 4 stockpile		M gC4 =	0.00397 (mg/s)	
mass flux of liner leakage from LOSP		M gC4LO =	0.05779 (mg/s)	
mass flux of seepage from Overburden (Storage)		M gOS =	20.27794 (mg/s)	
mass flux of liner leakage from Cat 3LO sumps to SW-004		M gC3LOs_0 =	0.00047 (mg/s)	
mass flux of liner leakage from Cat 4 sumps		M gC4s =	0.00022 (mg/s)	
mass flux of liner leakage from LOSP sumps		M gC4LOs =	0.00024 (mg/s)	
mass flux of seepage from Overburden Ponds - PW1		M gOp1 =	5.01400 (mg/s)	
mass flux of leakage from Haul Road Pond - PW2		M gHRp2 =	0.00563 (mg/s)	
mass flux of leakage from Haul Road Pond - PW4		M gHRp4 =	0.01206 (mg/s)	
mass flux of leakage from RTH Pond - PW3		M gRTHp =	0.00000 (mg/s)	
mass flux of liner leakage from WWTF pond		M gWTFp =	0.03756 (mg/s)	
mass flux of surface water into SW-004A		M s4A =	11,143.80805 (mg/s)	
mass flux of ground water into SW-004A		M g4A =	578.09279 (mg/s)	
mass flux of West Pit overflow		M sms =	#N/A (mg/s)	
mass flux of liner leakage from Cat 1/2 stockpile		M gC12 =	104.24342 (mg/s)	
mass flux of liner leakage from Cat 1/2 sumps		M gC12s =	0.00955 (mg/s)	
mass flux of seepage from Overburden (Cat 1/2)		M gO12 =	28.06213 (mg/s)	
mass flux of seepage from Overburden Pond - PW7		M gOp7 =	#N/A (mg/s)	
mass flux of surface water into SW-005		M s5 =	17,376.00916 (mg/s)	
mass flux of ground water into SW-005		M g5 =	950.12439 (mg/s)	
mass flux of surface water into USGS Gage		M s6 =	1,866.86508 (mg/s)	
mass flux of ground water into USGS Gage		M g6 =	196.72179 (mg/s)	
mass flux of surface water into Colby Lake		M scl =	11,334.71600 (mg/s)	
mass flux of ground water into Colby Lake		M gcl =	489.71169 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP		M shl =	187.62900 (mg/s)	
Mass balance at each node	Average Flow			
	mass flux in river at SW-001	M r1 =	2,943.4593 (mg/s)	
	mass flux in river at SW-002	M r2 =	5,608.9585 (mg/s)	
	mass flux in river at SW-003	M r3 =	6,399.2464 (mg/s)	
	mass flux in river at SW-004	M r4 =	9,301.9772 (mg/s)	
	mass flux in river at SW-004A	M r4A =	21,156.1932 (mg/s)	
	mass flux in river at SW-005	M r5 =	39,482.3267 (mg/s)	
	mass flux in river at USGS Gage	M r6 =	41,545.9136 (mg/s)	
	mass flux into Colby Lake	M cl =	53,557.9703 (mg/s)	
Convert mass flux to concentration	Average Flow			
	concentration in river at SW-001	C r1 =	18.24591 (mg/L)	
	concentration in river at SW-002	C r2 =	17.57941 (mg/L)	
	concentration in river at SW-003	C r3 =	17.47405 (mg/L)	
	concentration in river at SW-004	C r4 =	17.23873 (mg/L)	
	concentration in river at SW-004A	C r4A =	17.11365 (mg/L)	
	concentration in river at SW-005	C r5 =	16.99936 (mg/L)	
	concentration in river at USGS Gage	C r6 =	16.98737 (mg/L)	
	concentration in Colby Lake	C cl =	16.96704 (mg/L)	

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case		Year 20	
Parameter		Cadmium	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0001 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0001 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0001 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0001 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0001 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0001 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0001 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0001 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0001 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0001 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0001 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0001 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0001 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0001 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0001 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0001 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0001 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0001 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.0149 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0149 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0149 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0149 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0001 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.0149 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0149 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0149 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0149 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0001 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0001 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0001 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0001 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0073 (mg/L)
Convert concentration to mass flux			Average Flow
	mass flux of surface water into SW-001	M_s1 =	0.01279 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00051 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.00283 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	0.01504 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.00073 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.00440 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00029 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00	0.00000 (mg/s)
	mass flux of liner leakage from cat 3 sumps to SW-003	M_gC3s_003	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.01618 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.00086 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00013 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00003 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00000 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	0.06555 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.00391 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.00004 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	0.10221 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.00642 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.01098 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.00133 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	0.06667 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.00331 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00110 (mg/s)
Mass balance at each node			Average Flow
	mass flux in river at SW-001	M_r1 =	0.0161 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.0319 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.0366 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.0538 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.1233 (mg/s)
	mass flux in river at SW-005	M_r5 =	0.2320 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	0.2443 (mg/s)
	mass flux into Colby Lake	M_cl =	0.3154 (mg/s)
Convert mass flux to concentration			Average Flow
	concentration in river at SW-001	C_r1 =	0.00010 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00010 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00010 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00010 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00010 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00010 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00010 (mg/L)
	concentration in Colby Lake	C_cl =	0.00010 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case	Year 20		
Parameter	Chloride		
Input concentration data	concentration of surface water into SW-001	C s1 =	8.0000 (mg/L)
	concentration of surface water into SW-002	C s2 =	8.0000 (mg/L)
	concentration of surface water into SW-003	C s3 =	8.0000 (mg/L)
	concentration of surface water into SW-004	C s4 =	8.0000 (mg/L)
	concentration of surface water into SW-004A	C s4A =	8.0000 (mg/L)
	concentration of surface water into SW-005	C s5 =	8.0000 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	8.0000 (mg/L)
	concentration of surface water into Colby Lake	C scl =	8.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	8.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	1.6000 (mg/L)
	concentration of West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	6.6000 (mg/L)
	concentration of ground water into SW-002	C g2 =	6.6000 (mg/L)
	concentration of ground water into SW-003	C g3 =	6.6000 (mg/L)
	concentration of ground water into SW-004	C g4 =	6.6000 (mg/L)
	concentration of ground water into SW-004A	C g4A =	6.6000 (mg/L)
	concentration of ground water into SW-005	C g5 =	6.6000 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	6.6000 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	6.6000 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	- (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	16.1010 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	9.4483 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	14.5063 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	1.4665 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	5.3500 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	2.3300 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	- (mg/L)
	concentration of liner leakage from Cat 3 sumps	C gC3s =	16.1010 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	9.4483 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	14.5063 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	1.4665 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	5.3500 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	6.6000 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	6.6000 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	6.6000 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	14.4000 (mg/L)
		Average Flow	
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	1,023.42074 (mg/s)
	mass flux of ground water into SW-001	M g1 =	33.62040 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	45.28000 (mg/s)
	mass flux of surface water into SW-002	M s2 =	1,203.57645 (mg/s)
	mass flux of ground water into SW-002	M g2 =	48.14975 (mg/s)
	mass flux of surface water into SW-003	M s3 =	351.63158 (mg/s)
	mass flux of ground water into SW-003	M g3 =	19.00549 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep 003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M gC3 003 =	0.01336 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO 00 =	0.00163 (mg/s)
	mass flux of liner leakage from cat 3 sumps to SW-003	M gC3s 003 =	0.00001 (mg/s)
	mass flux of surface water into SW-004	M s4 =	1,294.14983 (mg/s)
	mass flux of ground water into SW-004	M g4 =	56.74924 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep 004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M gC3 004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO 00 =	0.00163 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00012 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00032 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	11.57812 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs 0 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00001 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	2.86285 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00251 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00538 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00100 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	5,244.14497 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	257.97244 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M gC12s =	- (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M gO12 =	4.13828 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	8,176.94549 (mg/s)
	mass flux of ground water into SW-005	M g5 =	423.99060 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	878.52474 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	87.78660 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	5,333.98400 (mg/s)
mass flux of ground water into Colby Lake	M gcl =	218.53260 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	88.29600 (mg/s)	
		Average Flow	
Mass balance at each node	mass flux in river at SW-001	M r1 =	1,102.3211 (mg/s)
	mass flux in river at SW-002	M r2 =	2,354.0473 (mg/s)
	mass flux in river at SW-003	M r3 =	2,724.6994 (mg/s)
	mass flux in river at SW-004	M r4 =	4,090.0504 (mg/s)
	mass flux in river at SW-004A	M r4A =	9,596.3061 (mg/s)
	mass flux in river at SW-005	M r5 =	18,197.2422 (mg/s)
	mass flux in river at USGS Gage	M r6 =	19,163.5535 (mg/s)
	mass flux into Colby Lake	M cl =	24,804.3661 (mg/s)
		Average Flow	
Convert mass flux to concentration	concentration in river at SW-001	C r1 =	6.83307 (mg/L)
	concentration in river at SW-002	C r2 =	7.37798 (mg/L)
	concentration in river at SW-003	C r3 =	7.44018 (mg/L)
	concentration in river at SW-004	C r4 =	7.57981 (mg/L)
	concentration in river at SW-004A	C r4A =	7.76263 (mg/L)
	concentration in river at SW-005	C r5 =	7.83494 (mg/L)
	concentration in river at USGS Gage	C r6 =	7.83563 (mg/L)
	concentration in Colby Lake	C cl =	7.85796 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case	Year 20			
Parameter	Cobalt			
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0005 (mg/L)	
	concentration of surface water into SW-002	C_s2 =	0.0005 (mg/L)	
	concentration of surface water into SW-003	C_s3 =	0.0005 (mg/L)	
	concentration of surface water into SW-004	C_s4 =	0.0005 (mg/L)	
	concentration of surface water into SW-004A	C_s4A =	0.0005 (mg/L)	
	concentration of surface water into SW-005	C_s5 =	0.0005 (mg/L)	
	concentration of surface water into USGS Gage	C_s6 =	0.0005 (mg/L)	
	concentration of surface water into Colby Lake	C_scl =	0.0005 (mg/L)	
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0005 (mg/L)	
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0005 (mg/L)	
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)	
	concentration of ground water into SW-001	C_g1 =	0.0017 (mg/L)	
	concentration of ground water into SW-002	C_g2 =	0.0017 (mg/L)	
	concentration of ground water into SW-003	C_g3 =	0.0017 (mg/L)	
	concentration of ground water into SW-004	C_g4 =	0.0017 (mg/L)	
	concentration of ground water into SW-004A	C_g4A =	0.0017 (mg/L)	
	concentration of ground water into SW-005	C_g5 =	0.0017 (mg/L)	
	concentration of ground water into USGS Gage	C_g6 =	0.0017 (mg/L)	
	concentration of ground water into Colby Lake	C_gcl =	0.0017 (mg/L)	
	concentration of ground water seepage from East Pit	C_ggp =	#N/A (mg/L)	
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)	
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0272 (mg/L)	
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	44.0000 (mg/L)	
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	44.0000 (mg/L)	
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	44.0000 (mg/L)	
	concentration of liner leakage from LOSP	C_gC4LO =	9.4551 (mg/L)	
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0011 (mg/L)	
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0013 (mg/L)	
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0272 (mg/L)	
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	44.0000 (mg/L)	
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	44.0000 (mg/L)	
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	44.0000 (mg/L)	
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	9.4551 (mg/L)	
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0011 (mg/L)	
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)	
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0017 (mg/L)	
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0017 (mg/L)	
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0017 (mg/L)	
	concentration of liner leakage from WWTF ponc	C_gWTFp =	10.6000 (mg/L)	
				Average Flow
	Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	0.06396 (mg/s)
mass flux of ground water into SW-001		M_g1 =	0.00841 (mg/s)	
mass flux of surface discharges from upstream of PM-1		M_sns =	0.01415 (mg/s)	
mass flux of surface water into SW-002		M_s2 =	0.07522 (mg/s)	
mass flux of ground water into SW-002		M_g2 =	0.01204 (mg/s)	
mass flux of surface water into SW-003		M_s3 =	0.02198 (mg/s)	
mass flux of ground water into SW-003		M_g3 =	0.00475 (mg/s)	
mass flux of seepage from East Pit to SW-003		M_gep_003 =	#N/A (mg/s)	
mass flux of liner leakage from Cat 3 stockpile to SW-003		M_gC3_003 =	0.03651 (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-003		M_gC3LO_00 =	0.00758 (mg/s)	
mass flux of liner leakage from cat 3 sumps to SW-003		M_gC3s_003 =	0.00002 (mg/s)	
mass flux of surface water into SW-004		M_s4 =	0.08088 (mg/s)	
mass flux of ground water into SW-004		M_g4 =	0.01419 (mg/s)	
mass flux of seepage from East Pit to SW-004		M_gep_004 =	#N/A (mg/s)	
mass flux of seepage from West Pit		M_gwp =	#N/A (mg/s)	
mass flux of liner leakage from Cat 3 stockpile to SW-004		M_gC3_004 =	- (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-004		M_gC3LO_00 =	0.00758 (mg/s)	
mass flux of liner leakage from Cat 4 stockpile		M_gC4 =	0.00036 (mg/s)	
mass flux of liner leakage from LOSP		M_gC4LO =	0.00203 (mg/s)	
mass flux of seepage from Overburden (Storage)		M_gOS =	0.00240 (mg/s)	
mass flux of liner leakage from Cat 3LO sumps to SW-004		M_gC3LOs_0 =	0.00004 (mg/s)	
mass flux of liner leakage from Cat 4 sumps		M_gC4s =	0.00002 (mg/s)	
mass flux of liner leakage from LOSP sumps		M_gC4LOs =	0.00001 (mg/s)	
mass flux of seepage from Overburden Ponds - PW1		M_gOp1 =	0.00059 (mg/s)	
mass flux of leakage from Haul Road Pond - PW2		M_gHRp2 =	0.00000 (mg/s)	
mass flux of leakage from Haul Road Pond - PW4		M_gHRp4 =	0.00000 (mg/s)	
mass flux of leakage from RTH Pond - PW3		M_gRTHp =	0.00000 (mg/s)	
mass flux of liner leakage from WWTF pond		M_gWTFp =	0.00074 (mg/s)	
mass flux of surface water into SW-004A		M_s4A =	0.32776 (mg/s)	
mass flux of ground water into SW-004A		M_g4A =	0.06449 (mg/s)	
mass flux of West Pit overflow		M_sms =	#N/A (mg/s)	
mass flux of liner leakage from Cat 1/2 stockpile		M_gC12 =	0.00650 (mg/s)	
mass flux of liner leakage from Cat 1/2 sumps		M_gC12s =	0.00000 (mg/s)	
mass flux of seepage from Overburden (Cat 1/2)		M_gO12 =	0.00231 (mg/s)	
mass flux of seepage from Overburden Pond - PW7		M_gOp7 =	#N/A (mg/s)	
mass flux of surface water into SW-005		M_s5 =	0.51106 (mg/s)	
mass flux of ground water into SW-005		M_g5 =	0.10600 (mg/s)	
mass flux of surface water into USGS Gage		M_s6 =	0.05491 (mg/s)	
mass flux of ground water into USGS Gage		M_g6 =	0.02195 (mg/s)	
mass flux of surface water into Colby Lake		M_scl =	0.33337 (mg/s)	
mass flux of ground water into Colby Lake		M_gcl =	0.05463 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP		M_shl =	0.00552 (mg/s)	
			Average Flow	
Mass balance at each node	mass flux in river at SW-001	M_r1 =	0.0865 (mg/s)	
	mass flux in river at SW-002	M_r2 =	0.1738 (mg/s)	
	mass flux in river at SW-003	M_r3 =	0.2446 (mg/s)	
	mass flux in river at SW-004	M_r4 =	0.3535 (mg/s)	
	mass flux in river at SW-004A	M_r4A =	0.7545 (mg/s)	
	mass flux in river at SW-005	M_r5 =	1.3716 (mg/s)	
	mass flux in river at USGS Gage	M_r6 =	1.4485 (mg/s)	
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	1.8420 (mg/s)	
	Average Flow			
	concentration in river at SW-001	C_r1 =	0.00054 (mg/L)	
	concentration in river at SW-002	C_r2 =	0.00054 (mg/L)	
	concentration in river at SW-003	C_r3 =	0.00067 (mg/L)	
	concentration in river at SW-004	C_r4 =	0.00066 (mg/L)	
	concentration in river at SW-004A	C_r4A =	0.00061 (mg/L)	
	concentration in river at SW-005	C_r5 =	0.00059 (mg/L)	
	concentration in river at USGS Gage	C_r6 =	0.00059 (mg/L)	
concentration in Colby Lake	C_cl =	0.00058 (mg/L)		

**Partridge River Mass-Balance Model - Mine Site - Proposed Action**

Case Parameter	Year 20 Copper		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0017 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0017 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0017 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0017 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0017 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0017 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0017 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0017 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0190 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0012 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0030 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0030 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0030 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0030 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0030 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0030 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0030 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0030 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0920 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	202.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	202.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	148.3651 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	1.7066 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0214 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0170 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0920 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	202.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	202.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	148.3651 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	1.7066 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0214 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0030 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0030 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0030 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	39.0000 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	0.21748 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.01503 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.03509 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	0.25576 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.02152 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.07472 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00849 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.16760 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.03480 (mg/s)
	mass flux of liner leakage from cat 3 sumps to SW-003	M_gC3s_003 =	0.00011 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.27501 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.02537 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.03480 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00123 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00037 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.04640 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00020 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00007 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.01147 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00271 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	1.11438 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.11531 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.02200 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.03019 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	1.73760 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.18951 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.18669 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.03924 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	1.13347 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.09768 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.20970 (mg/s)
Mass balance at each node	Average Flow		
	mass flux in river at SW-001	M_r1 =	0.2676 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.5449 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.8306 (mg/s)
	mass flux in river at SW-004	M_r4 =	1.2283 (mg/s)
	mass flux in river at SW-004A	M_r4A =	2.5102 (mg/s)
	mass flux in river at SW-005	M_r5 =	4.4373 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	4.8633 (mg/s)
	mass flux into Colby Lake	M_cl =	6.1041 (mg/s)
Convert mass flux to concentration	Average Flow		
	concentration in river at SW-001	C_r1 =	0.00166 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00171 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00227 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00228 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00203 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00191 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00191 (mg/L)
	concentration in Colby Lake	C_cl =	0.00193 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case	Year 20		
Parameter	Fluoride		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0700 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0700 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0700 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0700 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0700 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0700 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0700 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0700 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0700 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.1400 (mg/L)
	concentration of West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.2800 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.2800 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.2800 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.2800 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.2800 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.2800 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.2800 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.2800 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	0.0623 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	0.0622 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0622 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0622 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.0626 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.2239 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	0.4200 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	0.0623 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C gC3s =	0.0622 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.0622 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0622 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0626 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.2239 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.2800 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.2800 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.2800 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	37.7000 (mg/L)
		Average Flow	
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	8.95493 (mg/s)
	mass flux of ground water into SW-001	M g1 =	1.42632 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	3.96200 (mg/s)
	mass flux of surface water into SW-002	M s2 =	10.53129 (mg/s)
	mass flux of ground water into SW-002	M g2 =	2.04272 (mg/s)
	mass flux of surface water into SW-003	M s3 =	3.07678 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.80629 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep 003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M gC3 003 =	0.00005 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO 00 =	0.00001 (mg/s)
	mass flux of liner leakage from cat 3 sumps to SW-003	M gC3s 003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	11.32381 (mg/s)
	mass flux of ground water into SW-004	M g4 =	2.40754 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep 004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M gC3 004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO 00 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.48453 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs 0 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.11981 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00011 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00023 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00262 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	45.88627 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	10.94429 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M gC12 =	0.01489 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M gO12 =	0.74596 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	71.54827 (mg/s)
	mass flux of ground water into SW-005	M g5 =	17.98748 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	7.68709 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	3.72428 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	46.67236 (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	9.27108 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.77259 (mg/s)
		Average Flow	
Mass balance at each node	mass flux in river at SW-001	M r1 =	14.3433 (mg/s)
	mass flux in river at SW-002	M r2 =	26.9173 (mg/s)
	mass flux in river at SW-003	M r3 =	30.8004 (mg/s)
	mass flux in river at SW-004	M r4 =	45.1391 (mg/s)
	mass flux in river at SW-004A	M r4A =	102.7305 (mg/s)
	mass flux in river at SW-005	M r5 =	192.2662 (mg/s)
	mass flux in river at USGS Gage	M r6 =	203.6776 (mg/s)
mass flux into Colby Lake	M cl =	260.3936 (mg/s)	
		Average Flow	
Convert mass flux to concentration	concentration in river at SW-001	C r1 =	0.08891 (mg/L)
	concentration in river at SW-002	C r2 =	0.08436 (mg/L)
	concentration in river at SW-003	C r3 =	0.08410 (mg/L)
	concentration in river at SW-004	C r4 =	0.08365 (mg/L)
	concentration in river at SW-004A	C r4A =	0.08310 (mg/L)
	concentration in river at SW-005	C r5 =	0.08278 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.08328 (mg/L)
	concentration in Colby Lake	C cl =	0.08249 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case	Year 20			
Parameter	Iron			
Input concentration data	concentration of surface water into SW-001	C s1 =	1.6000 (mg/L)	
	concentration of surface water into SW-002	C s2 =	1.6000 (mg/L)	
	concentration of surface water into SW-003	C s3 =	1.6000 (mg/L)	
	concentration of surface water into SW-004	C s4 =	1.6000 (mg/L)	
	concentration of surface water into SW-004A	C s4A =	1.6000 (mg/L)	
	concentration of surface water into SW-005	C s5 =	1.6000 (mg/L)	
	concentration of surface water into USGS Gage	C s6 =	1.6000 (mg/L)	
	concentration of surface water into Colby Lake	C scl =	1.6000 (mg/L)	
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	1.6000 (mg/L)	
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0300 (mg/L)	
	concentration of West Pit overflow	C sms =	#N/A (mg/L)	
	concentration of ground water into SW-001	C g1 =	2.8440 (mg/L)	
	concentration of ground water into SW-002	C g2 =	2.8440 (mg/L)	
	concentration of ground water into SW-003	C g3 =	2.8440 (mg/L)	
	concentration of ground water into SW-004	C g4 =	2.8440 (mg/L)	
	concentration of ground water into SW-004A	C g4A =	2.8440 (mg/L)	
	concentration of ground water into SW-005	C g5 =	2.8440 (mg/L)	
	concentration of ground water into USGS Gage	C g6 =	2.8440 (mg/L)	
	concentration of ground water into Colby Lake	C gcl =	2.8440 (mg/L)	
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)	
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)	
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	0.8100 (mg/L)	
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	235.0000 (mg/L)	
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	235.0000 (mg/L)	
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	235.0000 (mg/L)	
	concentration of liner leakage from LOSP	C gC4LO =	235.0000 (mg/L)	
	concentration of seepage from Overburden (Storage)	C gOS =	0.2255 (mg/L)	
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	0.1500 (mg/L)	
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	0.8100 (mg/L)	
	concentration of liner leakage from Cat 3 sumps	C gC3s =	235.0000 (mg/L)	
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	235.0000 (mg/L)	
	concentration of liner leakage from Cat 4 sumps	C gC4s =	235.0000 (mg/L)	
	concentration of liner leakage from LOSP sumps	C gC4LOs =	235.0000 (mg/L)	
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.2255 (mg/L)	
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)	
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	2.8440 (mg/L)	
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	2.8440 (mg/L)	
	concentration of leakage from RTH Pond - PW3	C gRTHp =	2.8440 (mg/L)	
	concentration of liner leakage from WWTF pond	C_gWTFp =	92.2000 (mg/L)	
	Convert concentration to mass flux	Average Flow		
		mass flux of surface water into SW-001	M s1 =	204.68415 (mg/s)
		mass flux of ground water into SW-001	M g1 =	14.48734 (mg/s)
mass flux of surface discharges from upstream of PM-1		M sns =	0.84900 (mg/s)	
mass flux of surface water into SW-002		M s2 =	240.71529 (mg/s)	
mass flux of ground water into SW-002		M g2 =	20.74816 (mg/s)	
mass flux of surface water into SW-003		M s3 =	70.32632 (mg/s)	
mass flux of ground water into SW-003		M g3 =	8.18964 (mg/s)	
mass flux of seepage from East Pit to SW-003		M gep_003 =	#N/A (mg/s)	
mass flux of liner leakage from Cat 3 stockpile to SW-003		M gC3_003 =	0.19499 (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-003		M gC3LO_00 =	0.04049 (mg/s)	
mass flux of liner leakage from cat 3 sumps to SW-003		M gC3s_003 =	0.00012 (mg/s)	
mass flux of surface water into SW-004		M s4 =	258.82997 (mg/s)	
mass flux of ground water into SW-004		M g4 =	24.45376 (mg/s)	
mass flux of seepage from East Pit to SW-004		M gep_004 =	#N/A (mg/s)	
mass flux of seepage from West Pit		M gwp =	#N/A (mg/s)	
mass flux of liner leakage from Cat 3 stockpile to SW-004		M gC3_004 =	- (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-004		M gC3LO_00 =	0.04049 (mg/s)	
mass flux of liner leakage from Cat 4 stockpile		M gC4 =	0.00194 (mg/s)	
mass flux of liner leakage from LOSP		M gC4LO =	0.05056 (mg/s)	
mass flux of seepage from Overburden (Storage)		M gOS =	0.48801 (mg/s)	
mass flux of liner leakage from Cat 3LO sumps to SW-004		M gC3LOs_0 =	0.00023 (mg/s)	
mass flux of liner leakage from Cat 4 sumps		M gC4s =	0.00011 (mg/s)	
mass flux of liner leakage from LOSP sumps		M gC4LOs =	0.00021 (mg/s)	
mass flux of seepage from Overburden Ponds - PW1		M gOp1 =	0.12067 (mg/s)	
mass flux of leakage from Haul Road Pond - PW2		M gHRp2 =	0.00108 (mg/s)	
mass flux of leakage from Haul Road Pond - PW4		M gHRp4 =	0.00232 (mg/s)	
mass flux of leakage from RTH Pond - PW3		M gRTHp =	0.00000 (mg/s)	
mass flux of liner leakage from WWTF pond		M_gWTFp =	0.00640 (mg/s)	
mass flux of surface water into SW-004A		M s4A =	1,048.82899 (mg/s)	
mass flux of ground water into SW-004A		M g4A =	111.16267 (mg/s)	
mass flux of West Pit overflow		M sms =	#N/A (mg/s)	
mass flux of liner leakage from Cat 1/2 stockpile		M_gC12 =	0.19367 (mg/s)	
mass flux of liner leakage from Cat 1/2 sumps		M_gC12s =	0.00002 (mg/s)	
mass flux of seepage from Overburden (Cat 1/2)		M_gO12 =	0.26641 (mg/s)	
mass flux of seepage from Overburden Pond - PW7		M_gOp7 =	#N/A (mg/s)	
mass flux of surface water into SW-005		M s5 =	1,635.38910 (mg/s)	
mass flux of ground water into SW-005		M g5 =	182.70140 (mg/s)	
mass flux of surface water into USGS Gage		M s6 =	175.70495 (mg/s)	
mass flux of ground water into USGS Gage		M g6 =	37.82804 (mg/s)	
mass flux of surface water into Colby Lake		M scl =	1,066.79680 (mg/s)	
mass flux of ground water into Colby Lake		M gcl =	94.16768 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP		M_shl =	17.65920 (mg/s)	
Mass balance at each node	Average Flow			
	mass flux in river at SW-001	M r1 =	220.0205 (mg/s)	
	mass flux in river at SW-002	M r2 =	481.4839 (mg/s)	
	mass flux in river at SW-003	M r3 =	560.2355 (mg/s)	
	mass flux in river at SW-004	M r4 =	844.2314 (mg/s)	
	mass flux in river at SW-004A	M r4A =	2,004.6831 (mg/s)	
	mass flux in river at SW-005	M r5 =	3,822.7736 (mg/s)	
	mass flux in river at USGS Gage	M r6 =	4,036.3066 (mg/s)	
	mass flux into Colby Lake	M cl =	5,214.9303 (mg/s)	
Convert mass flux to concentration	Average Flow			
	concentration in river at SW-001	C r1 =	1.36386 (mg/L)	
	concentration in river at SW-002	C r2 =	1.50905 (mg/L)	
	concentration in river at SW-003	C r3 =	1.52980 (mg/L)	
	concentration in river at SW-004	C r4 =	1.56456 (mg/L)	
	concentration in river at SW-004A	C r4A =	1.62163 (mg/L)	
	concentration in river at SW-005	C r5 =	1.64592 (mg/L)	
	concentration in river at USGS Gage	C r6 =	1.65037 (mg/L)	
	concentration in Colby Lake	C cl =	1.65208 (mg/L)	



Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case	Year 20			
Parameter	Hardness			
Input concentration data	concentration of surface water into SW-001	C_s1 =	110.0000 (mg/L)	
	concentration of surface water into SW-002	C_s2 =	110.0000 (mg/L)	
	concentration of surface water into SW-003	C_s3 =	110.0000 (mg/L)	
	concentration of surface water into SW-004	C_s4 =	110.0000 (mg/L)	
	concentration of surface water into SW-004A	C_s4A =	110.0000 (mg/L)	
	concentration of surface water into SW-005	C_s5 =	110.0000 (mg/L)	
	concentration of surface water into USGS Gage	C_s6 =	110.0000 (mg/L)	
	concentration of surface water into Colby Lake	C_scl =	110.0000 (mg/L)	
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	110.0000 (mg/L)	
	concentration of surface water discharges from upstream of PM-1	C_sns =	#N/A (mg/L)	
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)	
	concentration of ground water into SW-001	C_g1 =	66.4200 (mg/L)	
	concentration of ground water into SW-002	C_g2 =	66.4200 (mg/L)	
	concentration of ground water into SW-003	C_g3 =	66.4200 (mg/L)	
	concentration of ground water into SW-004	C_g4 =	66.4200 (mg/L)	
	concentration of ground water into SW-004A	C_g4A =	66.4200 (mg/L)	
	concentration of ground water into SW-005	C_g5 =	66.4200 (mg/L)	
	concentration of ground water into USGS Gage	C_g6 =	66.4200 (mg/L)	
	concentration of ground water into Colby Lake	C_gcl =	66.4200 (mg/L)	
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)	
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)	
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	1,412.9373 (mg/L)	
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	5,435.6906 (mg/L)	
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	5,435.6906 (mg/L)	
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	5,435.6906 (mg/L)	
	concentration of liner leakage from LOSP	C_gC4LO =	1,923.2256 (mg/L)	
	concentration of seepage from Overburden (Storage)	C_gOS =	43.5200 (mg/L)	
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	71.5000 (mg/L)	
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	1,412.9373 (mg/L)	
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	5,435.6906 (mg/L)	
	concentration of liner leakage from Cat 3LO sumps	C_g3LOs =	5,435.6906 (mg/L)	
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	5,435.6906 (mg/L)	
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	1,923.2256 (mg/L)	
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	43.5200 (mg/L)	
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)	
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	66.4200 (mg/L)	
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	66.4200 (mg/L)	
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	66.4200 (mg/L)	
	concentration of liner leakage from WWTF pond	C_gWTFp =	2,825.0000 (mg/L)	
	Convert concentration to mass flux	Average Flow		
		mass flux of surface water into SW-001	M_s1 =	14,072.03511 (mg/s)
		mass flux of ground water into SW-001	M_g1 =	338.34348 (mg/s)
mass flux of surface discharges from upstream of PM-1		M_sns =	3,113.00000 (mg/s)	
mass flux of surface water into SW-002		M_s2 =	16,549.17621 (mg/s)	
mass flux of ground water into SW-002		M_g2 =	484.56154 (mg/s)	
mass flux of surface water into SW-003		M_s3 =	4,834.93429 (mg/s)	
mass flux of ground water into SW-003		M_g3 =	191.26430 (mg/s)	
mass flux of seepage from East Pit to SW-003		M_gep_003 =	#N/A (mg/s)	
mass flux of liner leakage from Cat 3 stockpile to SW-003		M_gC3_003 =	4.51014 (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-003		M_gC3LO_00 =	0.93657 (mg/s)	
mass flux of liner leakage from cat 3 sumps to SW-003		M_gC3s_003 =	0.00286 (mg/s)	
mass flux of surface water into SW-004		M_s4 =	17,794.56019 (mg/s)	
mass flux of ground water into SW-004		M_g4 =	571.10370 (mg/s)	
mass flux of seepage from East Pit to SW-004		M_gep_004 =	#N/A (mg/s)	
mass flux of seepage from West Pit		M_gwp =	#N/A (mg/s)	
mass flux of liner leakage from Cat 3 stockpile to SW-004		M_gC3_004 =	- (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-004		M_gC3LO_00 =	0.93657 (mg/s)	
mass flux of liner leakage from Cat 4 stockpile		M_gC4 =	0.04490 (mg/s)	
mass flux of liner leakage from LOSP		M_gC4LO =	0.41376 (mg/s)	
mass flux of seepage from Overburden (Storage)		M_gOS =	94.18314 (mg/s)	
mass flux of liner leakage from Cat 3LO sumps to SW-004		M_gC3LOs_0 =	0.00534 (mg/s)	
mass flux of liner leakage from Cat 4 sumps		M_gC4s =	0.00248 (mg/s)	
mass flux of liner leakage from LOSP sumps		M_gC4LOs =	0.00175 (mg/s)	
mass flux of seepage from Overburden Ponds - PW1		M_gOp1 =	23.28806 (mg/s)	
mass flux of leakage from Haul Road Pond - PW2		M_gHRp2 =	0.02527 (mg/s)	
mass flux of leakage from Haul Road Pond - PW4		M_gHRp4 =	0.05414 (mg/s)	
mass flux of leakage from RTH Pond - PW3		M_gRTHp =	0.00002 (mg/s)	
mass flux of liner leakage from WWTF pond		M_gWTFp =	0.19611 (mg/s)	
mass flux of surface water into SW-004A		M_s4A =	72,106.99328 (mg/s)	
mass flux of ground water into SW-004A		M_g4A =	2,596.14083 (mg/s)	
mass flux of West Pit overflow		M_sms =	#N/A (mg/s)	
mass flux of liner leakage from Cat 1/2 stockpile		M_gC12 =	337.83603 (mg/s)	
mass flux of liner leakage from Cat 1/2 sumps		M_gC12s =	0.03096 (mg/s)	
mass flux of seepage from Overburden (Cat 1/2)		M_gO12 =	126.99004 (mg/s)	
mass flux of seepage from Overburden Pond - PW7		M_gOp7 =	#N/A (mg/s)	
mass flux of surface water into SW-005		M_s5 =	112,433.00046 (mg/s)	
mass flux of ground water into SW-005		M_g5 =	4,266.88722 (mg/s)	
mass flux of surface water into USGS Gage		M_s6 =	12,079.71524 (mg/s)	
mass flux of ground water into USGS Gage		M_g6 =	883.45242 (mg/s)	
mass flux of surface water into Colby Lake		M_scl =	73,342.28000 (mg/s)	
mass flux of ground water into Colby Lake		M_gcl =	2,199.23262 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP		M_shl =	1,214.07000 (mg/s)	
Mass balance at each node	Average Flow			
	mass flux in river at SW-001	M_r1 =	17,523.3786 (mg/s)	
	mass flux in river at SW-002	M_r2 =	34,557.1163 (mg/s)	
	mass flux in river at SW-003	M_r3 =	39,588.7645 (mg/s)	
	mass flux in river at SW-004	M_r4 =	58,073.5828 (mg/s)	
	mass flux in river at SW-004A	M_r4A =	133,241.5739 (mg/s)	
	mass flux in river at SW-005	M_r5 =	249,941.4616 (mg/s)	
	mass flux in river at USGS Gage	M_r6 =	262,904.6293 (mg/s)	
	mass flux into Colby Lake	M_cl =	339,660.2119 (mg/s)	
Convert mass flux to concentration	Average Flow			
	concentration in river at SW-001	C_r1 =	108.62389 (mg/L)	
	concentration in river at SW-002	C_r2 =	108.30777 (mg/L)	
	concentration in river at SW-003	C_r3 =	108.10276 (mg/L)	
	concentration in river at SW-004	C_r4 =	107.62385 (mg/L)	
	concentration in river at SW-004A	C_r4A =	107.78163 (mg/L)	
	concentration in river at SW-005	C_r5 =	107.61385 (mg/L)	
	concentration in river at USGS Gage	C_r6 =	107.49696 (mg/L)	
	concentration in Colby Lake	C_cl =	107.60354 (mg/L)	



Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case		Year 20	
Parameter		Potassium	
Input concentration data	concentration of surface water into SW-001	C_s1 =	1.3000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	1.3000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	1.3000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	1.3000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	1.3000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	1.3000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	1.3000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	1.3000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	1.3000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	2.7000 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	1.7500 (mg/L)
	concentration of ground water into SW-002	C_g2 =	1.7500 (mg/L)
	concentration of ground water into SW-003	C_g3 =	1.7500 (mg/L)
	concentration of ground water into SW-004	C_g4 =	1.7500 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	1.7500 (mg/L)
	concentration of ground water into SW-005	C_g5 =	1.7500 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	1.7500 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	1.7500 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	49.0000 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	38.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	38.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	38.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	38.0000 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	2.2600 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	4.4500 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	49.0000 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	38.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	38.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	38.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	38.0000 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	2.2600 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	1.7500 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	1.7500 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	1.7500 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	48.3000 (mg/L)
Convert concentration to mass flux			Average Flow
	mass flux of surface water into SW-001	M_s1 =	166.30587 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	8.91450 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	76.41000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	195.58117 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	12.76698 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	57.14013 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	5.03933 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.03153 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00655 (mg/s)
	mass flux of liner leakage from cat 3 sumps to SW-003	M_gC3s_003 =	0.00002 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	210.29935 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	15.04715 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00655 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00031 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00818 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	4.89094 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00004 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00002 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00003 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	1.20935 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00067 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00143 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00335 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	852.17356 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	68.40178 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	11.71599 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00107 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	7.90358 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	1,328.75364 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	112.42175 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	142.76027 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	23.27675 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	866.77240 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	57.94425 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	14.34810 (mg/s)
Mass balance at each node			Average Flow
	mass flux in river at SW-001	M_r1 =	251.6304 (mg/s)
	mass flux in river at SW-002	M_r2 =	459.9785 (mg/s)
	mass flux in river at SW-003	M_r3 =	522.1961 (mg/s)
	mass flux in river at SW-004	M_r4 =	753.6635 (mg/s)
	mass flux in river at SW-004A	M_r4A =	1,693.8595 (mg/s)
	mass flux in river at SW-005	M_r5 =	3,135.0348 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	3,301.0719 (mg/s)
	mass flux into Colby Lake	M_cl =	4,240.1366 (mg/s)
			Average Flow
	concentration in river at SW-001	C_r1 =	1.55981 (mg/L)
	concentration in river at SW-002	C_r2 =	1.44165 (mg/L)
	concentration in river at SW-003	C_r3 =	1.42593 (mg/L)
	concentration in river at SW-004	C_r4 =	1.39671 (mg/L)
	concentration in river at SW-004A	C_r4A =	1.37020 (mg/L)
	concentration in river at SW-005	C_r5 =	1.34981 (mg/L)
	concentration in river at USGS Gage	C_r6 =	1.34975 (mg/L)
	concentration in Colby Lake	C_cl =	1.34327 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case		Year 20	
Parameter		Magnesium	
Input concentration data	concentration of surface water into SW-001	C_s1 =	8.0000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	8.0000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	8.0000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	8.0000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	8.0000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	8.0000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	8.0000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	8.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	8.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	10.5000 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	8.0200 (mg/L)
	concentration of ground water into SW-002	C_g2 =	8.0200 (mg/L)
	concentration of ground water into SW-003	C_g3 =	8.0200 (mg/L)
	concentration of ground water into SW-004	C_g4 =	8.0200 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	8.0200 (mg/L)
	concentration of ground water into SW-005	C_g5 =	8.0200 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	8.0200 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	8.0200 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	79.1470 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	1,030.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	1,030.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	1,030.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	304.5749 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	4.8800 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	9.0100 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	79.1470 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	1,030.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	1,030.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	1,030.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	304.5749 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	4.8800 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	8.0200 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	8.0200 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	8.0200 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	359.0000 (mg/L)
		Average Flow	
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	1,023.42074 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	40.85388 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	297.15000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	1,203.57645 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	58.50924 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	351.63158 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	23.09455 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.85462 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.17747 (mg/s)
	mass flux of liner leakage from cat 3 sumps to SW-003	M_gC3s_003 =	0.00054 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	1,294.14983 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	68.95892 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.17747 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00851 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.06553 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	10.56098 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00101 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00047 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00028 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	2.61135 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00305 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00654 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.02492 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	5,244.14497 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	313.47560 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	18.92421 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00173 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	16.00252 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	8,176.94549 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	515.21282 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	878.52474 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	106.67402 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	5,333.98400 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	265.55022 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	88.29600 (mg/s)
		Average Flow	
Mass balance at each node	mass flux in river at SW-001	M_r1 =	1,361.4248 (mg/s)
	mass flux in river at SW-002	M_r2 =	2,623.5103 (mg/s)
	mass flux in river at SW-003	M_r3 =	2,999.2691 (mg/s)
	mass flux in river at SW-004	M_r4 =	4,375.6385 (mg/s)
	mass flux in river at SW-004A	M_r4A =	9,968.3875 (mg/s)
	mass flux in river at SW-005	M_r5 =	18,660.5458 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	19,645.7446 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	25,333.5748 (mg/s)
			Average Flow
	concentration in river at SW-001	C_r1 =	8.43920 (mg/L)
	concentration in river at SW-002	C_r2 =	8.22252 (mg/L)
	concentration in river at SW-003	C_r3 =	8.18993 (mg/L)
	concentration in river at SW-004	C_r4 =	8.10945 (mg/L)
	concentration in river at SW-004A	C_r4A =	8.06362 (mg/L)
	concentration in river at SW-005	C_r5 =	8.03441 (mg/L)
	concentration in river at USGS Gage	C_r6 =	8.03279 (mg/L)
	concentration in Colby Lake	C_cl =	8.02562 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case		Year 20	
Parameter		Manganese	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.1500 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.1500 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.1500 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.1500 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.1500 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.1500 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.1500 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.1500 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.1500 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0086 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.1240 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.1240 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.1240 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.1240 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.1240 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.1240 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.1240 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.1240 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.5937 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	47.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	47.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	47.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	21.3787 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.1604 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.1160 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.5937 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	47.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	47.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	47.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	21.3787 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.1604 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.1240 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.1240 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.1240 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	16.4000 (mg/L)
		Average Flow	
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	19.18914 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.63166 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.24338 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	22.56706 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.90463 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	6.59309 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.35707 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.03900 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00810 (mg/s)
	mass flux of liner leakage from cat 3 sumps to SW-003	M_gC3s_003 =	0.00002 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	24.26531 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	1.06620 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00810 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00039 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00460 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.34711 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00005 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00002 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00002 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.08583 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00005 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00010 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00114 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	98.32772 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	4.84675 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.14197 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.20603 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	153.31773 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	7.96588 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	16.47234 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	1.64932 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	100.01220 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	4.10576 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	1.65555 (mg/s)
		Average Flow	
Mass balance at each node	mass flux in river at SW-001	M_r1 =	20.0642 (mg/s)
	mass flux in river at SW-002	M_r2 =	43.5369 (mg/s)
	mass flux in river at SW-003	M_r3 =	50.6331 (mg/s)
	mass flux in river at SW-004	M_r4 =	76.3121 (mg/s)
	mass flux in river at SW-004A	M_r4A =	179.8346 (mg/s)
	mass flux in river at SW-005	M_r5 =	341.1182 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	359.2398 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	465.0133 (mg/s)
			Average Flow
	concentration in river at SW-001	C_r1 =	0.12437 (mg/L)
	concentration in river at SW-002	C_r2 =	0.13645 (mg/L)
	concentration in river at SW-003	C_r3 =	0.13799 (mg/L)
	concentration in river at SW-004	C_r4 =	0.14142 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.14547 (mg/L)
	concentration in river at SW-005	C_r5 =	0.14687 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.14689 (mg/L)
	concentration in Colby Lake	C_cl =	0.14732 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case Parameter	Year 20 Sodium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	2.5000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	2.5000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	2.5000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	2.5000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	2.5000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	2.5000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	2.5000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	2.5000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	2.5000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	4.8000 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	13.3300 (mg/L)
	concentration of ground water into SW-002	C_g2 =	13.3300 (mg/L)
	concentration of ground water into SW-003	C_g3 =	13.3300 (mg/L)
	concentration of ground water into SW-004	C_g4 =	13.3300 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	13.3300 (mg/L)
	concentration of ground water into SW-005	C_g5 =	13.3300 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	13.3300 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	13.3300 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	443.6984 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	338.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	338.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	338.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	115.0873 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	4.6000 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	7.1900 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	443.6984 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	338.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_g3LOs =	338.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	338.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	115.0873 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	4.6000 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	13.3300 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	13.3300 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	13.3300 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	451.0000 (mg/L)
Convert concentration to mass flux	Average Flow		
	mass flux of surface water into SW-001	M_s1 =	319.81898 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	67.90302 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	135.84000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	376.11764 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	97.24790 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	109.88487 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	38.38532 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.28045 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.05824 (mg/s)
	mass flux of liner leakage from cat 3 sumps to SW-003	M_gC3s_003 =	0.00018 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	404.42182 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	114.61626 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.05824 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00279 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.02476 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	9.95502 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00033 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00015 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00010 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	2.46151 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00507 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.01087 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.03131 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	1,638.79530 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	521.02615 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	106.08914 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00972 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	12.77005 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	2,555.29547 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	856.33253 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	274.53898 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	177.30233 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	1,666.87000 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	441.36963 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	27.59250 (mg/s)
Mass balance at each node	Average Flow		
	mass flux in river at SW-001	M_r1 =	523.5620 (mg/s)
	mass flux in river at SW-002	M_r2 =	996.9275 (mg/s)
	mass flux in river at SW-003	M_r3 =	1,145.5366 (mg/s)
	mass flux in river at SW-004	M_r4 =	1,677.1250 (mg/s)
	mass flux in river at SW-004A	M_r4A =	3,955.8154 (mg/s)
	mass flux in river at SW-005	M_r5 =	7,367.4434 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	7,819.2847 (mg/s)
	mass flux into Colby Lake	M_cl =	9,955.1168 (mg/s)
Convert mass flux to concentration	Average Flow		
	concentration in river at SW-001	C_r1 =	3.24546 (mg/L)
	concentration in river at SW-002	C_r2 =	3.12454 (mg/L)
	concentration in river at SW-003	C_r3 =	3.12805 (mg/L)
	concentration in river at SW-004	C_r4 =	3.10810 (mg/L)
	concentration in river at SW-004A	C_r4A =	3.19993 (mg/L)
	concentration in river at SW-005	C_r5 =	3.17210 (mg/L)
	concentration in river at USGS Gage	C_r6 =	3.19716 (mg/L)
concentration in Colby Lake	C_cl =	3.15376 (mg/L)	

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case	Year 20		
Parameter	Nickel		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0016 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0016 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0016 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0016 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0016 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0016 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0016 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0016 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0033 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0016 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0163 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0163 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0163 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0163 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0163 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0163 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0163 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0163 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.1762 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	762.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	762.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	762.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	115.5450 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0080 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0190 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.1762 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	762.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	762.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	762.0000 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0080 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0163 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0163 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0163 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	176.0000 (mg/L)
		Average Flow	
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	0.19957 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.08293 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.04387 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	0.23470 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.11877 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.06857 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.04688 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.63225 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00	0.13129 (mg/s)
	mass flux of liner leakage from cat 3 sumps to SW-003	M_gC3s_003	0.00040 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.25236 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.13998 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00	0.13129 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00629 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.02486 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.01725 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0	0.00075 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00035 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00011 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00426 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00001 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00001 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.01222 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	1.02261 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.63633 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.04213 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.03375 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	1.59450 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	1.04584 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.17131 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.21654 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	1.04013 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.53905 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.03642 (mg/s)
		Average Flow	
Mass balance at each node	mass flux in river at SW-001	M_r1 =	0.3264 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.6798 (mg/s)
	mass flux in river at SW-003	M_r3 =	1.5592 (mg/s)
	mass flux in river at SW-004	M_r4 =	2.1494 (mg/s)
	mass flux in river at SW-004A	M_r4A =	3.8842 (mg/s)
	mass flux in river at SW-005	M_r5 =	6.5245 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	6.9124 (mg/s)
Convert mass flux to concentration	concentration in river at SW-001	C_r1 =	0.00202 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00213 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00426 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00398 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00314 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00281 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00283 (mg/L)
		Average Flow	



Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case Parameter	Year 20 Lead		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0005 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0005 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0005 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0005 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0005 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0005 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0005 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0005 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0005 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0002 (mg/L)
	concentration of West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0011 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0011 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0011 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0011 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0011 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0011 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0011 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0011 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	0.0210 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	0.0528 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0528 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0528 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.0528 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0007 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	0.0210 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C gC3s =	0.0528 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.0528 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0528 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0528 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0007 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0011 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0011 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0011 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	0.0510 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	0.06396 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.00571 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.00425 (mg/s)
	mass flux of surface water into SW-002	M s2 =	0.07522 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.00817 (mg/s)
	mass flux of surface water into SW-003	M s3 =	0.02198 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.00323 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep 003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M gC3 003 =	0.00004 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO 00 =	0.00001 (mg/s)
	mass flux of liner leakage from cat 3 sumps to SW-003	M gC3s 003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	0.08088 (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.00963 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep 004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M gC3 004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO 00 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.00146 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs 0 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.00036 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00000 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	0.32776 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.04378 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M gC12 =	0.00503 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	0.51106 (mg/s)
	mass flux of ground water into SW-005	M g5 =	0.07195 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	0.05491 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.01490 (mg/s)
mass flux of surface water into Colby Lake	M scl =	0.33337 (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	0.03708 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.00552 (mg/s)	
Mass balance at each node	mass flux in river at SW-001	M r1 =	0.0739 (mg/s)
	mass flux in river at SW-002	M r2 =	0.1573 (mg/s)
	mass flux in river at SW-003	M r3 =	0.1826 (mg/s)
	mass flux in river at SW-004	M r4 =	0.2749 (mg/s)
	mass flux in river at SW-004A	M r4A =	0.6515 (mg/s)
	mass flux in river at SW-005	M r5 =	1.2345 (mg/s)
	mass flux in river at USGS Gage	M r6 =	1.3043 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M cl =	1.6803 (mg/s)
Convert mass flux to concentration	concentration in river at SW-001	C r1 =	0.00046 (mg/L)
	concentration in river at SW-002	C r2 =	0.00049 (mg/L)
	concentration in river at SW-003	C r3 =	0.00050 (mg/L)
	concentration in river at SW-004	C r4 =	0.00051 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00053 (mg/L)
	concentration in river at SW-005	C r5 =	0.00053 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00053 (mg/L)
	concentration in Colby Lake	C cl =	0.00053 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case	Year 20		
Parameter	Antimony		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0015 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0015 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0015 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0015 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0015 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0015 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0015 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0015 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0015 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0015 (mg/L)
	concentration of West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0015 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0015 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0015 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0015 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0015 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0015 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0015 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0015 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	0.0800 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	0.0800 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0800 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0800 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.0484 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0003 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	0.0004 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	0.0800 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C gC3s =	0.0800 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.0800 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0800 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0484 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0003 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0015 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0015 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0015 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	0.1089 (mg/L)
			Average Flow
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	0.19189 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.00764 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.04245 (mg/s)
	mass flux of surface water into SW-002	M s2 =	0.22567 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.01094 (mg/s)
	mass flux of surface water into SW-003	M s3 =	0.06593 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.00432 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep 003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M gC3 003 =	0.00007 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO 00 =	0.00001 (mg/s)
	mass flux of liner leakage from cat 3 sumps to SW-003	M gC3s 003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	0.24265 (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.01290 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep 004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M gC3 004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO 00 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.00065 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs 0 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.00016 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00001 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	0.98328 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.05863 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M gC12 =	0.01913 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M gO12 =	0.00071 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	1.53318 (mg/s)
	mass flux of ground water into SW-005	M g5 =	0.09636 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	0.16472 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.01995 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	1.00012 (mg/s)
mass flux of ground water into Colby Lake	M gcl =	0.04967 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.01656 (mg/s)	
Mass balance at each node	mass flux in river at SW-001	M r1 =	0.2420 (mg/s)
	mass flux in river at SW-002	M r2 =	0.4786 (mg/s)
	mass flux in river at SW-003	M r3 =	0.5489 (mg/s)
	mass flux in river at SW-004	M r4 =	0.8053 (mg/s)
	mass flux in river at SW-004A	M r4A =	1.8671 (mg/s)
	mass flux in river at SW-005	M r5 =	3.4966 (mg/s)
	mass flux in river at USGS Gage	M r6 =	3.6813 (mg/s)
mass flux into Colby Lake	M cl =	4.7476 (mg/s)	
Convert mass flux to concentration	concentration in river at SW-001	C r1 =	0.00150 (mg/L)
	concentration in river at SW-002	C r2 =	0.00150 (mg/L)
	concentration in river at SW-003	C r3 =	0.00150 (mg/L)
	concentration in river at SW-004	C r4 =	0.00149 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00151 (mg/L)
	concentration in river at SW-005	C r5 =	0.00151 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00151 (mg/L)
	concentration in Colby Lake	C cl =	0.00150 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case		Year 20	
Parameter		Selenium	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0005 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0005 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0005 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0005 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0005 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0005 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0005 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0005 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0005 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0005 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0019 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0019 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0019 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0019 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0019 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0019 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0019 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0019 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0029 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.0029 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0029 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0029 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0029 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0004 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0019 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0029 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.0029 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0029 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0029 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0029 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0004 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0019 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0019 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0019 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0130 (mg/L)
		Average Flow	
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	0.06396 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00973 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.01415 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	0.07522 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.01393 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.02198 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00550 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00000 (mg/s)
	mass flux of liner leakage from cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.08088 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.01642 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00096 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00024 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00000 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	0.32776 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.07466 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.00069 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.00337 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	0.51106 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.12270 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.05491 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.02540 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	0.33337 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.06324 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00552 (mg/s)
		Average Flow	
Mass balance at each node	mass flux in river at SW-001	M_r1 =	0.0878 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.1770 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.2045 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.3030 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.7095 (mg/s)
	mass flux in river at SW-005	M_r5 =	1.3432 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	1.4235 (mg/s)
	mass flux into Colby Lake	M_cl =	1.8257 (mg/s)
		Average Flow	
Convert mass flux to concentration	concentration in river at SW-001	C_r1 =	0.00054 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00055 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00056 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00056 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00057 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00058 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00058 (mg/L)
	concentration in Colby Lake	C_cl =	0.00058 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case Parameter	Year 20 sulfate			
Input concentration data	concentration of surface water into SW-001	C s1 =	9.0000 (mg/L)	
	concentration of surface water into SW-002	C s2 =	9.0000 (mg/L)	
	concentration of surface water into SW-003	C s3 =	9.0000 (mg/L)	
	concentration of surface water into SW-004	C s4 =	9.0000 (mg/L)	
	concentration of surface water into SW-004A	C s4A =	9.0000 (mg/L)	
	concentration of surface water into SW-005	C s5 =	9.0000 (mg/L)	
	concentration of surface water into USGS Gage	C s6 =	9.0000 (mg/L)	
	concentration of surface water into Colby Lake	C scl =	9.0000 (mg/L)	
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	22.0000 (mg/L)	
	concentration of surface water discharges from upstream of PM-1	C sns =	22.0000 (mg/L)	
	concentration of West Pit overflow	C sms =	#N/A (mg/L)	
	concentration of ground water into SW-001	C g1 =	16.1300 (mg/L)	
	concentration of ground water into SW-002	C g2 =	16.1300 (mg/L)	
	concentration of ground water into SW-003	C g3 =	16.1300 (mg/L)	
	concentration of ground water into SW-004	C g4 =	16.1300 (mg/L)	
	concentration of ground water into SW-004A	C g4A =	16.1300 (mg/L)	
	concentration of ground water into SW-005	C g5 =	16.1300 (mg/L)	
	concentration of ground water into USGS Gage	C g6 =	16.1300 (mg/L)	
	concentration of ground water into Colby Lake	C gcl =	16.1300 (mg/L)	
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)	
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)	
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	980.8782 (mg/L)	
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	9,600.0000 (mg/L)	
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	9,600.0000 (mg/L)	
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	9,600.0000 (mg/L)	
	concentration of liner leakage from LOSP	C gC4LO =	9,600.0000 (mg/L)	
	concentration of seepage from Overburden (Storage)	C gOS =	35.1700 (mg/L)	
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	68.3000 (mg/L)	
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	980.8782 (mg/L)	
	concentration of liner leakage from Cat 3 sumps	C gC3s =	9,600.0000 (mg/L)	
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	9,600.0000 (mg/L)	
	concentration of liner leakage from Cat 4 sumps	C gC4s =	9,600.0000 (mg/L)	
	concentration of liner leakage from LOSP sumps	C gC4LOs =	9,600.0000 (mg/L)	
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	35.1700 (mg/L)	
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)	
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	16.1300 (mg/L)	
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	16.1300 (mg/L)	
	concentration of leakage from RTH Pond - PW3	C gRTHp =	16.1300 (mg/L)	
	concentration of liner leakage from WWTF ponc	C_gWTFp =	5,020.0000 (mg/L)	
	Convert concentration to mass flux	Average Flow		
		mass flux of surface water into SW-001	M s1 =	1,151.34833 (mg/s)
		mass flux of ground water into SW-001	M g1 =	82.16622 (mg/s)
mass flux of surface discharges from upstream of PM-1		M sns =	622.60000 (mg/s)	
mass flux of surface water into SW-002		M s2 =	1,354.02351 (mg/s)	
mass flux of ground water into SW-002		M g2 =	117.67506 (mg/s)	
mass flux of surface water into SW-003		M s3 =	395.58553 (mg/s)	
mass flux of ground water into SW-003		M g3 =	46.44826 (mg/s)	
mass flux of seepage from East Pit to SW-003		M gep 003 =	#N/A (mg/s)	
mass flux of liner leakage from Cat 3 stockpile to SW-003		M gC3_003 =	7.96537 (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-003		M gC3LO_00 =	1.65408 (mg/s)	
mass flux of liner leakage from cat 3 sumps to SW-003		M gC3s_003 =	0.00505 (mg/s)	
mass flux of surface water into SW-004		M s4 =	1,455.91856 (mg/s)	
mass flux of ground water into SW-004		M g4 =	138.69170 (mg/s)	
mass flux of seepage from East Pit to SW-004		M gep 004 =	#N/A (mg/s)	
mass flux of seepage from West Pit		M gwp =	#N/A (mg/s)	
mass flux of liner leakage from Cat 3 stockpile to SW-004		M gC3_004 =	- (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-004		M gC3LO_00 =	1.65408 (mg/s)	
mass flux of liner leakage from Cat 4 stockpile		M gC4 =	0.07930 (mg/s)	
mass flux of liner leakage from LOSP		M gC4LO =	2.06532 (mg/s)	
mass flux of seepage from Overburden (Storage)		M gOS =	76.11262 (mg/s)	
mass flux of liner leakage from Cat 3LO sumps to SW-004		M gC3LOs_0 =	0.00942 (mg/s)	
mass flux of liner leakage from Cat 4 sumps		M gC4s =	0.00438 (mg/s)	
mass flux of liner leakage from LOSP sumps		M gC4LOs =	0.00875 (mg/s)	
mass flux of seepage from Overburden Ponds - PW1		M gOp1 =	18.81988 (mg/s)	
mass flux of leakage from Haul Road Pond - PW2		M gHRp2 =	0.00614 (mg/s)	
mass flux of leakage from Haul Road Pond - PW4		M gHRp4 =	0.01315 (mg/s)	
mass flux of leakage from RTH Pond - PW3		M gRTHp =	0.00000 (mg/s)	
mass flux of liner leakage from WWTF pond		M gWTFp =	0.34849 (mg/s)	
mass flux of surface water into SW-004A		M s4A =	5,899.66309 (mg/s)	
mass flux of ground water into SW-004A		M g4A =	630.46901 (mg/s)	
mass flux of West Pit overflow		M sms =	#N/A (mg/s)	
mass flux of liner leakage from Cat 1/2 stockpile		M gC12 =	234.52986 (mg/s)	
mass flux of liner leakage from Cat 1/2 sumps		M gC12s =	0.02149 (mg/s)	
mass flux of seepage from Overburden (Cat 1/2)		M gO12 =	121.30657 (mg/s)	
mass flux of seepage from Overburden Pond - PW7		M gOp7 =	#N/A (mg/s)	
mass flux of surface water into SW-005		M s5 =	9,199.06367 (mg/s)	
mass flux of ground water into SW-005		M g5 =	1,036.20733 (mg/s)	
mass flux of surface water into USGS Gage		M s6 =	988.34034 (mg/s)	
mass flux of ground water into USGS Gage		M g6 =	214.54513 (mg/s)	
mass flux of surface water into Colby Lake		M scl =	6,000.73200 (mg/s)	
mass flux of ground water into Colby Lake		M gcl =	534.08043 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP		M shl =	99.33300 (mg/s)	
Mass balance at each node	Average Flow			
	mass flux in river at SW-001	M r1 =	1,856.1145 (mg/s)	
	mass flux in river at SW-002	M r2 =	3,327.8131 (mg/s)	
	mass flux in river at SW-003	M r3 =	3,779.4714 (mg/s)	
	mass flux in river at SW-004	M r4 =	5,473.2082 (mg/s)	
	mass flux in river at SW-004A	M r4A =	12,359.1983 (mg/s)	
	mass flux in river at SW-005	M r5 =	22,594.4693 (mg/s)	
	mass flux in river at USGS Gage	M r6 =	23,797.3547 (mg/s)	
	mass flux into Colby Lake	M cl =	30,431.5002 (mg/s)	
Convert mass flux to concentration	Average Flow			
	concentration in river at SW-001	C r1 =	11.50568 (mg/L)	
	concentration in river at SW-002	C r2 =	10.42992 (mg/L)	
	concentration in river at SW-003	C r3 =	10.32039 (mg/L)	
	concentration in river at SW-004	C r4 =	10.14313 (mg/L)	
	concentration in river at SW-004A	C r4A =	9.99759 (mg/L)	
	concentration in river at SW-005	C r5 =	9.72819 (mg/L)	
	concentration in river at USGS Gage	C r6 =	9.73031 (mg/L)	
	concentration in Colby Lake	C cl =	9.64063 (mg/L)	

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case	Year 20			
Parameter	Thallium			
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0004 (mg/L)	
	concentration of surface water into SW-002	C_s2 =	0.0004 (mg/L)	
	concentration of surface water into SW-003	C_s3 =	0.0004 (mg/L)	
	concentration of surface water into SW-004	C_s4 =	0.0004 (mg/L)	
	concentration of surface water into SW-004A	C_s4A =	0.0004 (mg/L)	
	concentration of surface water into SW-005	C_s5 =	0.0004 (mg/L)	
	concentration of surface water into USGS Gage	C_s6 =	0.0004 (mg/L)	
	concentration of surface water into Colby Lake	C_scl =	0.0004 (mg/L)	
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0004 (mg/L)	
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0003 (mg/L)	
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)	
	concentration of ground water into SW-001	C_g1 =	0.0000 (mg/L)	
	concentration of ground water into SW-002	C_g2 =	0.0000 (mg/L)	
	concentration of ground water into SW-003	C_g3 =	0.0000 (mg/L)	
	concentration of ground water into SW-004	C_g4 =	0.0000 (mg/L)	
	concentration of ground water into SW-004A	C_g4A =	0.0000 (mg/L)	
	concentration of ground water into SW-005	C_g5 =	0.0000 (mg/L)	
	concentration of ground water into USGS Gage	C_g6 =	0.0000 (mg/L)	
	concentration of ground water into Colby Lake	C_gcl =	0.0000 (mg/L)	
	concentration of ground water seepage from East Pit	C_ggp =	#N/A (mg/L)	
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)	
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0000 (mg/L)	
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.0001 (mg/L)	
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0001 (mg/L)	
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0001 (mg/L)	
	concentration of liner leakage from LOSP	C_gC4LO =	0.0001 (mg/L)	
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0000 (mg/L)	
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	- (mg/L)	
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0000 (mg/L)	
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.0001 (mg/L)	
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0001 (mg/L)	
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0001 (mg/L)	
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0001 (mg/L)	
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0000 (mg/L)	
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)	
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0000 (mg/L)	
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0000 (mg/L)	
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0000 (mg/L)	
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0088 (mg/L)	
	Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	0.05117 (mg/s)
		mass flux of ground water into SW-001	M_g1 =	0.00002 (mg/s)
mass flux of surface discharges from upstream of PM-1		M_sns =	0.00809 (mg/s)	
mass flux of surface water into SW-002		M_s2 =	0.06018 (mg/s)	
mass flux of ground water into SW-002		M_g2 =	0.00003 (mg/s)	
mass flux of surface water into SW-003		M_s3 =	0.01758 (mg/s)	
mass flux of ground water into SW-003		M_g3 =	0.00001 (mg/s)	
mass flux of seepage from East Pit to SW-003		M_gep_003 =	#N/A (mg/s)	
mass flux of liner leakage from Cat 3 stockpile to SW-003		M_gC3_003 =	0.00000 (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-003		M_gC3LO_00	0.00000 (mg/s)	
mass flux of liner leakage from cat 3 sumps to SW-003		M_gC3s_003	0.00000 (mg/s)	
mass flux of surface water into SW-004		M_s4 =	0.06471 (mg/s)	
mass flux of ground water into SW-004		M_g4 =	0.00003 (mg/s)	
mass flux of seepage from East Pit to SW-004		M_gep_004 =	#N/A (mg/s)	
mass flux of seepage from West Pit		M_gwp =	#N/A (mg/s)	
mass flux of liner leakage from Cat 3 stockpile to SW-004		M_gC3_004 =	- (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-004		M_gC3LO_00	0.00000 (mg/s)	
mass flux of liner leakage from Cat 4 stockpile		M_gC4 =	0.00000 (mg/s)	
mass flux of liner leakage from LOSP		M_gC4LO =	0.00000 (mg/s)	
mass flux of seepage from Overburden (Storage)		M_gOS =	0.00009 (mg/s)	
mass flux of liner leakage from Cat 3LO sumps to SW-004		M_gC3LOs_0	0.00000 (mg/s)	
mass flux of liner leakage from Cat 4 sumps		M_gC4s =	0.00000 (mg/s)	
mass flux of liner leakage from LOSP sumps		M_gC4LOs =	0.00000 (mg/s)	
mass flux of seepage from Overburden Ponds - PW1		M_gOp1 =	0.00002 (mg/s)	
mass flux of leakage from Haul Road Pond - PW2		M_gHRp2 =	0.00000 (mg/s)	
mass flux of leakage from Haul Road Pond - PW4		M_gHRp4 =	0.00000 (mg/s)	
mass flux of leakage from RTH Pond - PW3		M_gRTHp =	0.00000 (mg/s)	
mass flux of liner leakage from WWTF pond		M_gWTFp =	0.00000 (mg/s)	
mass flux of surface water into SW-004A		M_s4A =	0.26221 (mg/s)	
mass flux of ground water into SW-004A		M_g4A =	0.00016 (mg/s)	
mass flux of West Pit overflow		M_sms =	#N/A (mg/s)	
mass flux of liner leakage from Cat 1/2 stockpile		M_gC12 =	0.00000 (mg/s)	
mass flux of liner leakage from Cat 1/2 sumps		M_gC12s =	0.00000 (mg/s)	
mass flux of seepage from Overburden (Cat 1/2)		M_gO12 =	- (mg/s)	
mass flux of seepage from Overburden Pond - PW7		M_gOp7 =	#N/A (mg/s)	
mass flux of surface water into SW-005		M_s5 =	0.40885 (mg/s)	
mass flux of ground water into SW-005		M_g5 =	0.00026 (mg/s)	
mass flux of surface water into USGS Gage		M_s6 =	0.04393 (mg/s)	
mass flux of ground water into USGS Gage		M_g6 =	0.00005 (mg/s)	
mass flux of surface water into Colby Lake		M_scl =	0.26670 (mg/s)	
mass flux of ground water into Colby Lake		M_gcl =	0.00013 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP		M_shl =	0.00441 (mg/s)	
Mass balance at each node	Average Flow			
	mass flux in river at SW-001	M_r1 =	0.0593 (mg/s)	
	mass flux in river at SW-002	M_r2 =	0.1195 (mg/s)	
	mass flux in river at SW-003	M_r3 =	0.1371 (mg/s)	
	mass flux in river at SW-004	M_r4 =	0.2019 (mg/s)	
	mass flux in river at SW-004A	M_r4A =	0.4643 (mg/s)	
	mass flux in river at SW-005	M_r5 =	0.8734 (mg/s)	
	mass flux in river at USGS Gage	M_r6 =	0.9174 (mg/s)	
	mass flux into Colby Lake	M_cl =	1.1886 (mg/s)	
Convert mass flux to concentration	Average Flow			
	concentration in river at SW-001	C_r1 =	0.00037 (mg/L)	
	concentration in river at SW-002	C_r2 =	0.00037 (mg/L)	
	concentration in river at SW-003	C_r3 =	0.00037 (mg/L)	
	concentration in river at SW-004	C_r4 =	0.00037 (mg/L)	
	concentration in river at SW-004A	C_r4A =	0.00038 (mg/L)	
	concentration in river at SW-005	C_r5 =	0.00038 (mg/L)	
	concentration in river at USGS Gage	C_r6 =	0.00038 (mg/L)	
	concentration in Colby Lake	C_cl =	0.00038 (mg/L)	

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case		Year 20	
Parameter		Vanadium	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0009 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0009 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0009 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0009 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0009 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0009 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0009 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0009 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0009 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0043 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0043 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0043 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0043 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0043 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0043 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0043 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0043 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0043 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.6497 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	7.3056 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	9.7834 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	2.0444 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0235 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0017 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0014 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.6497 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	7.3056 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	9.7834 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	2.0444 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0235 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0017 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0043 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0043 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0043 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	9.6830 (mg/L)
		Average Flow	
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	0.11513 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.02190 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.12169 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	0.13540 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.03137 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.03956 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.01238 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00606 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00	0.00169 (mg/s)
	mass flux of liner leakage from cat 3 sumps to SW-003	M_gC3s_003	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.14559 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.03697 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00	0.00169 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00002 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00374 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0	0.00001 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00093 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00067 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	0.58997 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.16807 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.15533 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.00249 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	0.91991 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.27624 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.09883 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.05719 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	0.60007 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.14238 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00993 (mg/s)
		Average Flow	
Mass balance at each node	mass flux in river at SW-001	M_r1 =	0.2587 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.4255 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.4862 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.6748 (mg/s)
	mass flux in river at SW-004A	M_r4A =	1.5907 (mg/s)
	mass flux in river at SW-005	M_r5 =	2.7868 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	2.9429 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	3.6953 (mg/s)
			Average Flow
	concentration in river at SW-001	C_r1 =	0.00160 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00133 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00132 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00125 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00129 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00120 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00120 (mg/L)
	concentration in Colby Lake	C_cl =	0.00117 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case	Year 20		
Parameter	Zinc		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0160 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0160 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0160 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0160 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0160 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0160 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0160 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0160 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0620 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0073 (mg/L)
	concentration of West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0275 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0275 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0275 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0275 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0275 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0275 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0275 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0275 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	0.0900 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	26.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	26.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	26.0000 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	26.0000 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0046 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	0.0030 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	0.0900 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C gC3s =	26.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	26.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	26.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	26.0000 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0046 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0275 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0275 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0275 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	10.3000 (mg/L)
Convert concentration to mass flux	Average Flow		
	mass flux of surface water into SW-001	M s1 =	2.04684 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.14009 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.20744 (mg/s)
	mass flux of surface water into SW-002	M s2 =	2.40715 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.20062 (mg/s)
	mass flux of surface water into SW-003	M s3 =	0.70326 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.07919 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep 003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M gC3 003 =	0.02157 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO 00 =	0.00448 (mg/s)
	mass flux of liner leakage from cat 3 sumps to SW-003	M gC3s 003 =	0.00001 (mg/s)
	mass flux of surface water into SW-004	M s4 =	2.58830 (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.23646 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep 004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M gC3 004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO 00 =	0.00448 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00021 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00559 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.00987 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs 0 =	0.00003 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00001 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00002 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.00244 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00001 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00002 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00072 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	10.48829 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	1.07489 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.02152 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.00533 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	16.35389 (mg/s)
	mass flux of ground water into SW-005	M g5 =	1.76663 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	1.75705 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.36578 (mg/s)
mass flux of surface water into Colby Lake	M scl =	10.66797 (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	0.91055 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.68429 (mg/s)	
Mass balance at each node	Average Flow		
	mass flux in river at SW-001	M r1 =	2.3944 (mg/s)
	mass flux in river at SW-002	M r2 =	5.0021 (mg/s)
	mass flux in river at SW-003	M r3 =	5.8107 (mg/s)
	mass flux in river at SW-004	M r4 =	8.6588 (mg/s)
	mass flux in river at SW-004A	M r4A =	20.2489 (mg/s)
	mass flux in river at SW-005	M r5 =	38.3694 (mg/s)
	mass flux in river at USGS Gage	M r6 =	40.4922 (mg/s)
	mass flux into Colby Lake	M cl =	52.7550 (mg/s)
Convert mass flux to concentration	Average Flow		
	concentration in river at SW-001	C r1 =	0.01484 (mg/L)
	concentration in river at SW-002	C r2 =	0.01568 (mg/L)
	concentration in river at SW-003	C r3 =	0.01587 (mg/L)
	concentration in river at SW-004	C r4 =	0.01605 (mg/L)
	concentration in river at SW-004A	C r4A =	0.01638 (mg/L)
	concentration in river at SW-005	C r5 =	0.01652 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.01656 (mg/L)
	concentration in Colby Lake	C cl =	0.01671 (mg/L)



## Partridge River Mass-Balance--Mine Site-Proposed Action

### FLOWS

Case Flow	Year 20 High Flow Conditions			
Total flow in Partridge River	flow in river at SW-001	Q_r1_H =	85.35	(cfs)
	flow in river at SW-002	Q_r2_H =	172.44	(cfs)
	flow in river at SW-003	Q_r3_H =	227.98	(cfs)
	flow in river at SW-004	Q_r4_H =	283.61	(cfs)
	flow in river at SW-004A	Q_r4a_H =	916.94	(cfs)
	flow in river at SW-005	Q_r5_H =	1,082.89	(cfs)
	flow in river at USGS Gage	Q_r6_H =	1,084.41	(cfs)
	total flow into Colby Lake	Q_cl_H =	1,421.94	(cfs)
	flow check	Q_ck_H =	1,421.94	(cfs)
Input flow data	surface water flow into SW-001	Q_s1_H =	84.17	(cfs)
	surface water flow into SW-002	Q_s2_H =	86.83	(cfs)
	surface water flow into SW-003	Q_s3_H =	55.43	(cfs)
	surface water flow into SW-004	Q_s4_H =	55.21	(cfs)
	surface water flow into SW-004A	Q_s4a_H =	631.76	(cfs)
	surface water flow into SW-005	Q_s5_H =	163.69	(cfs)
	surface water flow into USGS Gage	Q_s6_H =	1.04	(cfs)
	surface water flow into Colby Lake	Q_scl_H =	335.97	(cfs)
	surface water inflow from Hoyt Lakes WWTP	Q_shl_H =	0.39	(cfs)
	surface water inflow from discharges upstream of PM-1	Q_sns_H =	1.00	(cfs)
	surface water flow from West Pit overflow	Q_sms_H =	-	(cfs)
	ground water flow into SW-001	Q_g1_H =	0.18	(cfs)
	ground water flow into SW-002	Q_g2_H =	0.26	(cfs)
	ground water flow into SW-003	Q_g3_H =	0.10	(cfs)
	ground water flow into SW-004	Q_g4_H =	0.30	(cfs)
	ground water flow into SW-004A	Q_g4a_H =	1.38	(cfs)
	ground water flow into SW-005	Q_g5_H =	2.27	(cfs)
	ground water flow into USGS Gage	Q_g6_H =	0.47	(cfs)
	ground water flow into Colby Lake	Q_gcl_H =	1.17	(cfs)
	ground water seepage from East Pit to SW-003	Q_gep_003_H =	0.0112	(cfs)
	ground water seepage from East Pit to SW-004	Q_gep_004_H =	0.0112	(cfs)
	ground water seepage from West Pit	Q_gwp_H =	-	(cfs)
	ground water liner leakage from Cat 1/2 stockpile	Q_gC12_H =	0.0225	(cfs)
	ground water liner leakage from Cat 3 stockpile to SW-003	Q_gC3_003_H =	0.0002	(cfs)
	ground water liner leakage from Cat 3 stockpile to SW-004	Q_gC3_004_H =	-	(cfs)
	ground water liner leakage from Cat 3LO stockpile to SW-003	Q_gC3LO_003_H =	0.0002	(cfs)
	ground water liner leakage from Cat 3LO stockpile to SW-004	Q_gC3LO_004_H =	0.0002	(cfs)
	ground water liner leakage from Cat 4 stockpile	Q_gC4_H =	0.0000	(cfs)
	ground water liner leakage from LOSP	Q_gC4LO_H =	0.0002	(cfs)
	ground water seepage from Overburden Storage	Q_gOS_H =	0.0765	(cfs)
	ground water seepage from Overburden (Cat 1/2)	Q_gO12_H =	0.1674	(cfs)
	ground water liner leakage from Cat 1/2 sumps	Q_gC12s_H =	0.0000	(cfs)
	ground water liner leakage from Cat 3 sumps	Q_gC3s_H =	0.0000	(cfs)
	ground water liner leakage from Cat 3LO sumps	Q_gC3LOs_H =	0.0000	(cfs)
	ground water liner leakage from Cat 4 sumps	Q_gC4s_H =	0.0000	(cfs)
	ground water liner leakage from LOSP sumps	Q_gC4LOs_H =	0.0000	(cfs)
	ground water seepage from Overburden pond - PW1	Q_gOp1_H =	0.0189	(cfs)
	ground water seepage from Overburden pond - PW7	Q_gOp7_H =	-	(cfs)
	ground water leakage from Haul Road pond - PW2	Q_gHRp2_H =	0.0000	(cfs)
	ground water leakage from Haul Road pond - PW4	Q_gHRp4_H =	0.0000	(cfs)
	ground water leakage from RTH pond - PW3	Q_gRTHp_H =	0.0000	(cfs)
	ground water liner leakage from WWTF pond	Q_gWTFp_H =	0.000002	(cfs)

Partridge River Mass-Balance--Mine Site-Proposed Action

Case Parameter	Year 20 Silver		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0001 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0001 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0001 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0001 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0001 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0001 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0001 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0001 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0001 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0001 (mg/L)
	concentration of West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0006 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0006 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0006 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0006 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0006 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0006 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0006 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0006 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	0.0007 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	0.0007 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0007 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0007 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.0007 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	- (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	0.0007 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C gC3s =	0.0007 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.0007 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0007 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0007 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	- (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0006 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0006 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0006 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0053 (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M s1 =	0.23820 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.00280 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.00340 (mg/s)
	mass flux of surface water into SW-002	M s2 =	0.24573 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.00401 (mg/s)
	mass flux of surface water into SW-003	M s3 =	0.15687 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.00158 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep 003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M gC3 003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO 003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M gC3s 003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	0.15625 (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.00473 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep 004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M gC3 004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO 004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	- (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs 004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00000 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	1.78788 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.02150 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M gC12 =	0.00045 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	0.46323 (mg/s)
	mass flux of ground water into SW-005	M g5 =	0.03533 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	0.00295 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.00732 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	0.95080 (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	0.01821 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.00110 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M r1 =	0.2444 (mg/s)
	mass flux in river at SW-002	M r2 =	0.4941 (mg/s)
	mass flux in river at SW-003	M r3 =	0.6526 (mg/s)
	mass flux in river at SW-004	M r4 =	0.8136 (mg/s)
	mass flux in river at SW-004A	M r4A =	2.6234 (mg/s)
	mass flux in river at SW-005	M r5 =	3.1220 (mg/s)
	mass flux in river at USGS Gage	M r6 =	3.1322 (mg/s)
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C r1 =	0.00010 (mg/L)
	concentration in river at SW-002	C r2 =	0.00010 (mg/L)
	concentration in river at SW-003	C r3 =	0.00010 (mg/L)
	concentration in river at SW-004	C r4 =	0.00010 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00010 (mg/L)
	concentration in river at SW-005	C r5 =	0.00010 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00010 (mg/L)
	concentration in Colby Lake	C cl =	0.00011 (mg/L)

**Partridge River Mass-Balance--Mine Site-Proposed Action**

Case		Year 20	
Parameter		Aluminum	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0700 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0700 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0700 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0700 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0700 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0700 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0700 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0700 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0700 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0173 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.1250 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.1250 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.1250 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.1250 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.1250 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.1250 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.1250 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.1250 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	1.6800 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	83.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	83.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	83.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	83.0000 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.4106 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.1400 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	1.6800 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	83.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	83.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	83.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	83.0000 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.4106 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.1250 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.1250 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.1250 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	33.9000 (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M_s1 =	166.74077 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.63675 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.48959 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	172.01315 (mg/s)
	mass flux of surface water into SW-002	M_g2 =	0.91193 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	109.81145 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.35995 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.37037 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.41501 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00004 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	109.37481 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	1.07480 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.41501 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.05434 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.50470 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.88859 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00008 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00004 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00008 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.21972 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00005 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00010 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00235 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	1,251.51520 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	4.88584 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	1.07123 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00004 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.66310 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	324.26223 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	8.03013 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	2.06440 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	1.66263 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	665.55657 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	4.13888 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.77259 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	167.8671 (mg/s)
	mass flux in river at SW-002	M_r2 =	340.7922 (mg/s)
	mass flux in river at SW-003	M_r3 =	451.7490 (mg/s)
	mass flux in river at SW-004	M_r4 =	564.2837 (mg/s)
	mass flux in river at SW-004A	M_r4A =	1,822.4131 (mg/s)
	mass flux in river at SW-005	M_r5 =	2,154.7115 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	2,158.4385 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	2,828.9065 (mg/s)
	High Flow		
	concentration in river at SW-001	C_r1 =	0.06950 (mg/L)
	concentration in river at SW-002	C_r2 =	0.06983 (mg/L)
	concentration in river at SW-003	C_r3 =	0.07002 (mg/L)
	concentration in river at SW-004	C_r4 =	0.07031 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.07023 (mg/L)
	concentration in river at SW-005	C_r5 =	0.07031 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.07033 (mg/L)
	concentration in Colby Lake	C_cl =	0.07304 (mg/L)

Partridge River Mass-Balance--Mine Site-Proposed Action

Case Parameter	Year 20 Arsenic		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0021 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0021 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0021 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0021 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0021 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0021 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0021 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0021 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0021 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0065 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0022 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0022 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0022 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0022 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0022 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0022 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0022 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0022 (mg/L)
	concentration of ground water seepage from East Pit	C_gcp =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.7100 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.7100 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.7100 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.7100 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0919 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0016 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0027 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.7100 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.7100 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.7100 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.7100 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0919 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0016 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0022 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0022 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0022 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.5600 (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M_s1 =	5.02604 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.01100 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.18395 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	5.18497 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.01576 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	3.31003 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00622 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gcp_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00317 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00355 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	3.29687 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.01857 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gcp_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00355 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00046 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00056 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00338 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00083 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00004 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	37.72424 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.08443 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.45272 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00002 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.01279 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	9.77419 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.13876 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.06223 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.02873 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	20.06178 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.07152 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.02329 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	5.2210 (mg/s)
	mass flux in river at SW-002	M_r2 =	10.4217 (mg/s)
	mass flux in river at SW-003	M_r3 =	13.7447 (mg/s)
	mass flux in river at SW-004	M_r4 =	17.0690 (mg/s)
	mass flux in river at SW-004A	M_r4A =	55.3432 (mg/s)
	mass flux in river at SW-005	M_r5 =	65.2561 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	65.3471 (mg/s)
	mass flux into Colby Lake	M_cl =	85.5036 (mg/s)
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C_r1 =	0.00216 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00214 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00213 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00213 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00213 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00213 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00213 (mg/L)
	concentration in Colby Lake	C_cl =	0.00274 (mg/L)

Partridge River Mass-Balance--Mine Site-Proposed Action

Case Parameter	Year 20 Boron		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0450 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0450 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0450 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0450 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0450 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0450 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0450 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0450 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0450 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0960 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0870 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0870 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0870 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0870 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0870 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0870 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0870 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0870 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.7600 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.7600 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.7600 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.7600 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.7600 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0622 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0370 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.7600 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.7600 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.7600 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.7600 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.7600 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0622 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0870 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0870 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0870 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	1.1000 (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M_s1 =	107.19050 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.44318 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	2.71680 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	110.57988 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.63470 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	70.59308 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.25053 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00339 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00380 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	70.31238 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.74806 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00380 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00050 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00462 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.13461 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.03328 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00003 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00007 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00008 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	804.54548 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	3.40055 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.48460 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00002 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.17525 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	208.45429 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	5.58897 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	1.32712 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	1.15719 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	427.85780 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	2.88066 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.49667 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	110.3505 (mg/s)
	mass flux in river at SW-002	M_r2 =	221.5651 (mg/s)
	mass flux in river at SW-003	M_r3 =	292.4159 (mg/s)
	mass flux in river at SW-004	M_r4 =	363.6533 (mg/s)
	mass flux in river at SW-004A	M_r4A =	1,172.2592 (mg/s)
	mass flux in river at SW-005	M_r5 =	1,386.3024 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	1,388.7867 (mg/s)
	mass flux into Colby Lake	M_cl =	1,820.0219 (mg/s)
	High Flow		
	concentration in river at SW-001	C_r1 =	0.04569 (mg/L)
	concentration in river at SW-002	C_r2 =	0.04540 (mg/L)
	concentration in river at SW-003	C_r3 =	0.04532 (mg/L)
	concentration in river at SW-004	C_r4 =	0.04531 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.04517 (mg/L)
	concentration in river at SW-005	C_r5 =	0.04524 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.04525 (mg/L)
	concentration in Colby Lake	C_cl =	0.04712 (mg/L)

**Partridge River Mass-Balance--Mine Site-Proposed Action**

Case Parameter	Year 20 Barium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0077 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0077 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0077 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0077 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0077 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0077 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0077 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0077 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0077 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0050 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0219 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0219 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0219 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0219 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0219 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0219 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0219 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0219 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.1900 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.1900 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.1900 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.1900 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.1900 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0168 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0140 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.1900 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.1900 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.1900 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.1900 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.1900 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0168 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0219 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0219 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0219 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.2800 (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M_s1 =	18.29384 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.11166 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.14150 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	18.87230 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.15992 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	12.04789 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.06312 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00085 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00095 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	11.99998 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.18848 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00095 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00012 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00116 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.03643 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00901 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00001 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00002 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00002 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	137.30910 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.85678 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.12115 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.06631 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	35.57620 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	1.40816 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.22649 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.29156 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	73.02106 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.72579 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.08476 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	18.5470 (mg/s)
	mass flux in river at SW-002	M_r2 =	37.5702 (mg/s)
	mass flux in river at SW-003	M_r3 =	49.6920 (mg/s)
	mass flux in river at SW-004	M_r4 =	61.9282 (mg/s)
	mass flux in river at SW-004A	M_r4A =	200.2815 (mg/s)
	mass flux in river at SW-005	M_r5 =	237.2659 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	237.7839 (mg/s)
	mass flux into Colby Lake	M_cl =	311.6156 (mg/s)
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C_r1 =	0.00768 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00770 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00770 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00772 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00772 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00774 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00775 (mg/L)
	concentration in Colby Lake	C_cl =	0.00825 (mg/L)



Partridge River Mass-Balance--Mine Site-Proposed Action

Case Parameter	Year 20 Beryllium			
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0001	(mg/L)
	concentration of surface water into SW-002	C s2 =	0.0001	(mg/L)
	concentration of surface water into SW-003	C s3 =	0.0001	(mg/L)
	concentration of surface water into SW-004	C s4 =	0.0001	(mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0001	(mg/L)
	concentration of surface water into SW-005	C s5 =	0.0001	(mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0001	(mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0001	(mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0001	(mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0001	(mg/L)
	concentration of West Pit overflow	C sms =	#N/A	(mg/L)
	concentration of ground water into SW-001	C g1 =	0.0001	(mg/L)
	concentration of ground water into SW-002	C g2 =	0.0001	(mg/L)
	concentration of ground water into SW-003	C g3 =	0.0001	(mg/L)
	concentration of ground water into SW-004	C g4 =	0.0001	(mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0001	(mg/L)
	concentration of ground water into SW-005	C g5 =	0.0001	(mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0001	(mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0001	(mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A	(mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A	(mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	0.0002	(mg/L)
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	0.0023	(mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0023	(mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0023	(mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.0023	(mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	-	(mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	-	(mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	0.0002	(mg/L)
	concentration of liner leakage from Cat 3 sumps	C gC3s =	0.0023	(mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.0023	(mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0023	(mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0023	(mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	-	(mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A	(mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0001	(mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0001	(mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0001	(mg/L)
	concentration of liner leakage from WWTF pond	C gWTFp =	0.0026	(mg/L)
Convert concentration to mass flux	High Flow			
	mass flux of surface water into SW-001	M s1 =	0.23820	(mg/s)
	mass flux of ground water into SW-001	M g1 =	0.00074	(mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.00283	(mg/s)
	mass flux of surface water into SW-002	M s2 =	0.24573	(mg/s)
	mass flux of ground water into SW-002	M g2 =	0.00106	(mg/s)
	mass flux of surface water into SW-003	M s3 =	0.15687	(mg/s)
	mass flux of ground water into SW-003	M g3 =	0.00042	(mg/s)
	mass flux of seepage from East Pit to SW-003	M gep 003 =	#N/A	(mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M gC3 003 =	0.00001	(mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO 003 =	0.00001	(mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M gC3s 003 =	0.00000	(mg/s)
	mass flux of surface water into SW-004	M s4 =	0.15625	(mg/s)
	mass flux of ground water into SW-004	M g4 =	0.00125	(mg/s)
	mass flux of seepage from East Pit to SW-004	M gep 004 =	#N/A	(mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A	(mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M gC3 004 =	-	(mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO 004 =	0.00001	(mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00000	(mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00001	(mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	-	(mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs 004 =	0.00000	(mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000	(mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000	(mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	-	(mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00000	(mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00000	(mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000	(mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00000	(mg/s)
	mass flux of surface water into SW-004A	M s4A =	1.78788	(mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.00567	(mg/s)
	mass flux of West Pit overflow	M sms =	#N/A	(mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M gC12 =	0.00013	(mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M gC12s =	0.00000	(mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M gO12 =	-	(mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A	(mg/s)
	mass flux of surface water into SW-005	M s5 =	0.46323	(mg/s)
	mass flux of ground water into SW-005	M g5 =	0.00931	(mg/s)
	mass flux of surface water into USGS Gage	M s6 =	0.00295	(mg/s)
mass flux of ground water into USGS Gage	M g6 =	0.00193	(mg/s)	
mass flux of surface water into Colby Lake	M scl =	0.95080	(mg/s)	
mass flux of ground water into Colby Lake	M gcl =	0.00480	(mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.00110	(mg/s)	
Mass balance at each node	High Flow			
	mass flux in river at SW-001	M r1 =	0.2418	(mg/s)
	mass flux in river at SW-002	M r2 =	0.4886	(mg/s)
	mass flux in river at SW-003	M r3 =	0.6459	(mg/s)
	mass flux in river at SW-004	M r4 =	0.8034	(mg/s)
	mass flux in river at SW-004A	M r4A =	2.5971	(mg/s)
	mass flux in river at SW-005	M r5 =	3.0696	(mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M r6 =	3.0745	(mg/s)
	mass flux into Colby Lake	M cl =	4.0312	(mg/s)
	High Flow			
	concentration in river at SW-001	C r1 =	0.00010	(mg/L)
	concentration in river at SW-002	C r2 =	0.00010	(mg/L)
	concentration in river at SW-003	C r3 =	0.00010	(mg/L)
	concentration in river at SW-004	C r4 =	0.00010	(mg/L)
	concentration in river at SW-004A	C r4A =	0.00010	(mg/L)
	concentration in river at SW-005	C r5 =	0.00010	(mg/L)
	concentration in river at USGS Gage	C r6 =	0.00010	(mg/L)
	concentration in Colby Lake	C cl =	0.00010	(mg/L)

Partridge River Mass-Balance--Mine Site-Proposed Action

Case	Year 20		
Parameter	Calcium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	17.0000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	17.0000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	17.0000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	17.0000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	17.0000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	17.0000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	17.0000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	17.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	17.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	24.5000 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	14.7900 (mg/L)
	concentration of ground water into SW-002	C_g2 =	14.7900 (mg/L)
	concentration of ground water into SW-003	C_g3 =	14.7900 (mg/L)
	concentration of ground water into SW-004	C_g4 =	14.7900 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	14.7900 (mg/L)
	concentration of ground water into SW-005	C_g5 =	14.7900 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	14.7900 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	14.7900 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	302.5160 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	480.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	480.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	480.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	186.9682 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	9.3700 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	15.8000 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	302.5160 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	480.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	480.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	480.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	186.9682 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	9.3700 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	14.7900 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	14.7900 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	14.7900 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	541.0000 (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M_s1 =	40,494.18700 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	75.34026 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	693.35000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	41,774.62169 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	107.89920 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	26,668.49591 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	42.58957 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	2,14193 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	2,40006 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00025 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	26,562.45336 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	127.16988 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	2,40006 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.31423 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	1,13691 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	20.27794 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00047 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00022 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00017 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	5.01400 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00563 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.01206 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.03756 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	303,939.40521 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	578.09279 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	192.89457 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00663 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	74.83577 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	78,749.39938 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	950.12439 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	501.35488 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	196.72179 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	161,635.16700 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	489.71169 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	187.62900 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	41,262.8773 (mg/s)
	mass flux in river at SW-002	M_r2 =	83,145.3982 (mg/s)
	mass flux in river at SW-003	M_r3 =	109,861.0259 (mg/s)
	mass flux in river at SW-004	M_r4 =	136,579.8486 (mg/s)
	mass flux in river at SW-004A	M_r4A =	441,365.0836 (mg/s)
	mass flux in river at SW-005	M_r5 =	521,064.6073 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	521,762.6840 (mg/s)
	mass flux into Colby Lake	M_cl =	684,075.1917 (mg/s)
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C_r1 =	17.08321 (mg/L)
	concentration in river at SW-002	C_r2 =	17.03788 (mg/L)
	concentration in river at SW-003	C_r3 =	17.02751 (mg/L)
	concentration in river at SW-004	C_r4 =	17.01698 (mg/L)
	concentration in river at SW-004A	C_r4A =	17.00872 (mg/L)
	concentration in river at SW-005	C_r5 =	17.00275 (mg/L)
	concentration in river at USGS Gage	C_r6 =	17.00179 (mg/L)
	concentration in Colby Lake	C_cl =	17.21199 (mg/L)

**Partridge River Mass-Balance--Mine Site-Proposed Action**

Case	Year 20		
Parameter	Cadmium		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0001 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0001 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0001 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0001 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0001 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0001 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0001 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0001 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0001 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0001 (mg/L)
	concentration of West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0001 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0001 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0001 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0001 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0001 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0001 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0001 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0001 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	0.0149 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0149 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0149 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.0149 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0001 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	(mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C gC3s =	0.0149 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.0149 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0149 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0149 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0001 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0001 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0001 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0001 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0073 (mg/L)

Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	0.23820 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.00051 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.00283 (mg/s)
	mass flux of surface water into SW-002	M s2 =	0.24573 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.00073 (mg/s)
	mass flux of surface water into SW-003	M s3 =	0.15687 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.00029 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep 003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M gC3 003 =	0.00007 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO 003 =	0.00007 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M gC3s 003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	0.15625 (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.00086 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep 004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M gC3 004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO 004 =	0.00007 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00001 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00009 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.00013 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs 004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.00003 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00000 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	1.78788 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.00391 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M gC12 =	0.00011 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	0.46323 (mg/s)
	mass flux of ground water into SW-005	M g5 =	0.00642 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	0.00295 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.00133 (mg/s)
mass flux of surface water into Colby Lake	M scl =	0.95080 (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	0.00331 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.00110 (mg/s)	

Mass balance at each node	mass flux in river at SW-001	M r1 =	0.2415 (mg/s)
	mass flux in river at SW-002	M r2 =	0.4880 (mg/s)
	mass flux in river at SW-003	M r3 =	0.6453 (mg/s)
	mass flux in river at SW-004	M r4 =	0.8028 (mg/s)
	mass flux in river at SW-004A	M r4A =	2.5947 (mg/s)
	mass flux in river at SW-005	M r5 =	3.0643 (mg/s)
	mass flux in river at USGS Gage	M r6 =	3.0686 (mg/s)
mass flux into Colby Lake	M cl =	4.0238 (mg/s)	

Convert mass flux to concentration	concentration in river at SW-001	C r1 =	0.00010 (mg/L)
	concentration in river at SW-002	C r2 =	0.00010 (mg/L)
	concentration in river at SW-003	C r3 =	0.00010 (mg/L)
	concentration in river at SW-004	C r4 =	0.00010 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00010 (mg/L)
	concentration in river at SW-005	C r5 =	0.00010 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00010 (mg/L)
	concentration in Colby Lake	C cl =	0.00010 (mg/L)

**Partridge River Mass-Balance--Mine Site-Proposed Action**

Case Parameter	Year 20 Chloride		
Input concentration data	concentration of surface water into SW-001	C_s1 =	8.0000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	8.0000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	8.0000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	8.0000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	8.0000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	8.0000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	8.0000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	8.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	8.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	1.6000 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	6.6000 (mg/L)
	concentration of ground water into SW-002	C_g2 =	6.6000 (mg/L)
	concentration of ground water into SW-003	C_g3 =	6.6000 (mg/L)
	concentration of ground water into SW-004	C_g4 =	6.6000 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	6.6000 (mg/L)
	concentration of ground water into SW-005	C_g5 =	6.6000 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	6.6000 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	6.6000 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	- (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	10.8576 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	6.3918 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	2.9013 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	1.0208 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	5.3500 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	2.3300 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	- (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	10.8576 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	6.3918 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	2.9013 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	1.0208 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	5.3500 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	6.6000 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	6.6000 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	6.6000 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	14.4000 (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M_s1 =	19,056.08800 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	33.62040 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	45.28000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	19,658.64550 (mg/s)
	mass flux of surface water into SW-002	M_g2 =	48.14975 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	12,549.88043 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	19.00549 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.04845 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.03196 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00001 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	12,499.97805 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	56.74924 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.03196 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00190 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00621 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	11.57812 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	2.86285 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00251 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00538 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00100 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	143,030.30833 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	257.97244 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	- (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	11.03591 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	37,058.54088 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	423.99060 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	235.93171 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	87.78660 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	76,063.60800 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	218.53260 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	88.29600 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	19,134.9884 (mg/s)
	mass flux in river at SW-002	M_r2 =	38,841.7836 (mg/s)
	mass flux in river at SW-003	M_r3 =	51,410.7500 (mg/s)
	mass flux in river at SW-004	M_r4 =	63,981.9672 (mg/s)
	mass flux in river at SW-004A	M_r4A =	207,281.2839 (mg/s)
	mass flux in river at SW-005	M_r5 =	244,763.8154 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	245,087.5337 (mg/s)
	mass flux into Colby Lake	M_cl =	321,457.9703 (mg/s)
	High Flow		
	concentration in river at SW-001	C_r1 =	7.92206 (mg/L)
	concentration in river at SW-002	C_r2 =	7.95933 (mg/L)
	concentration in river at SW-003	C_r3 =	7.96822 (mg/L)
	concentration in river at SW-004	C_r4 =	7.97174 (mg/L)
	concentration in river at SW-004A	C_r4A =	7.98792 (mg/L)
	concentration in river at SW-005	C_r5 =	7.98684 (mg/L)
	concentration in river at USGS Gage	C_r6 =	7.98625 (mg/L)
	concentration in Colby Lake	C_cl =	7.91890 (mg/L)

Partridge River Mass-Balance--Mine Site-Proposed Action

Case Parameter	Year 20 Cobalt		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0005 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0005 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0005 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0005 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0005 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0005 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0005 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0005 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0005 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0005 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0017 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0017 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0017 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0017 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0017 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0017 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0017 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0017 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0189 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	44.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	44.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	44.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	6.5815 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0011 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0013 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0189 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	44.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	44.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	44.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	6.5815 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0011 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0017 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0017 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0017 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	10.6000 (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M_s1 =	1.19101 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00841 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.01415 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	1.22867 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.01204 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.78437 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00475 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.19634 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.22001 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00002 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.78125 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.01419 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.22001 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.02880 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.04002 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00240 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00004 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00002 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00001 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00059 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00074 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	8.93939 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.06449 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.01204 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.00616 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	2.31616 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.10600 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.01475 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.02195 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	4.75398 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.05463 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00552 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	1.2136 (mg/s)
	mass flux in river at SW-002	M_r2 =	2.4543 (mg/s)
	mass flux in river at SW-003	M_r3 =	3.6598 (mg/s)
	mass flux in river at SW-004	M_r4 =	4.7478 (mg/s)
	mass flux in river at SW-004A	M_r4A =	13.7699 (mg/s)
	mass flux in river at SW-005	M_r5 =	16.1921 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	16.2288 (mg/s)
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C_r1 =	0.00050 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00050 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00057 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00059 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00053 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00053 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00053 (mg/L)
	concentration in Colby Lake	C_cl =	0.00067 (mg/L)

Partridge River Mass-Balance--Mine Site-Proposed Action

Case	Year 20		
Parameter	Copper		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0017 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0017 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0017 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0017 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0017 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0017 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0017 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0017 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shi =	0.0190 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0012 (mg/L)
	concentration of West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0030 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0030 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0030 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0030 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0030 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0030 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0030 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0030 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	0.0920 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	202.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	202.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	29.6730 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	1.1879 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0214 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	0.0170 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	0.0920 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C gC3s =	202.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	202.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	29.6730 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	1.1879 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0214 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0030 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0030 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0030 (mg/L)
	concentration of liner leakage from WWTF pond	C gWTFp =	39.0000 (mg/L)
			High Flow
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	4.04942 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.01503 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.03509 (mg/s)
	mass flux of surface water into SW-002	M s2 =	4.17746 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.02152 (mg/s)
	mass flux of surface water into SW-003	M s3 =	2.66685 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.00849 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M gC3_003 =	0.90139 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	1.01003 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M gC3s_003 =	0.00011 (mg/s)
	mass flux of surface water into SW-004	M s4 =	2.65625 (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.02537 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	1.01003 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.01943 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00722 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.04640 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00020 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00001 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.01147 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00271 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	30.39394 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.11531 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M gC12 =	0.05866 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M gO12 =	0.08052 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	7.87494 (mg/s)
	mass flux of ground water into SW-005	M g5 =	0.18951 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	0.05014 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.03924 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	16.16352 (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	0.09768 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shi =	0.20970 (mg/s)
Mass balance at each node	mass flux in river at SW-001	M r1 =	4.0995 (mg/s)
	mass flux in river at SW-002	M r2 =	8.2985 (mg/s)
	mass flux in river at SW-003	M r3 =	12.8854 (mg/s)
	mass flux in river at SW-004	M r4 =	16.6646 (mg/s)
	mass flux in river at SW-004A	M r4A =	47.3130 (mg/s)
	mass flux in river at SW-005	M r5 =	55.3775 (mg/s)
	mass flux in river at USGS Gage	M r6 =	55.4668 (mg/s)
	mass flux into Colby Lake	M cl =	71.9377 (mg/s)
Convert mass flux to concentration	concentration in river at SW-001	C r1 =	0.00170 (mg/L)
	concentration in river at SW-002	C r2 =	0.00170 (mg/L)
	concentration in river at SW-003	C r3 =	0.00200 (mg/L)
	concentration in river at SW-004	C r4 =	0.00208 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00182 (mg/L)
	concentration in river at SW-005	C r5 =	0.00181 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00181 (mg/L)
	concentration in Colby Lake	C cl =	0.00235 (mg/L)



Partridge River Mass-Balance--Mine Site-Proposed Action

Case Parameter	Year 20 Fluoride		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0700 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0700 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0700 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0700 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0700 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0700 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0700 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0700 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0700 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.1400 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.2800 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.2800 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.2800 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.2800 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.2800 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.2800 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.2800 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.2800 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0625 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.0622 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0622 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0622 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0627 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.2239 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.4200 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0625 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.0622 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0622 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0622 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0627 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.2239 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.2800 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.2800 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.2800 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	37.7000 (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M_s1 =	166.74077 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	1.42632 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	3.96200 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	172.01315 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	2.04272 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	109.81145 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.80629 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00028 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00031 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	109.37481 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	2.40754 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00031 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00004 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00038 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.48453 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.11981 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00011 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00023 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00262 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	1,251.51520 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	10.94429 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.03986 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	1.98931 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	324.26223 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	17.98748 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	2.06440 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	3.72428 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	665.55657 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	9.27108 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.77259 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	172.1291 (mg/s)
	mass flux in river at SW-002	M_r2 =	346.1850 (mg/s)
	mass flux in river at SW-003	M_r3 =	456.8033 (mg/s)
	mass flux in river at SW-004	M_r4 =	569.1937 (mg/s)
	mass flux in river at SW-004A	M_r4A =	1,833.6823 (mg/s)
	mass flux in river at SW-005	M_r5 =	2,175.9320 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	2,181.7207 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	2,857.3209 (mg/s)
	High Flow		
	concentration in river at SW-001	C_r1 =	0.07126 (mg/L)
	concentration in river at SW-002	C_r2 =	0.07094 (mg/L)
	concentration in river at SW-003	C_r3 =	0.07080 (mg/L)
	concentration in river at SW-004	C_r4 =	0.07092 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.07066 (mg/L)
	concentration in river at SW-005	C_r5 =	0.07100 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.07109 (mg/L)
	concentration in Colby Lake	C_cl =	0.07667 (mg/L)

Partridge River Mass-Balance--Mine Site-Proposed Action

Case Parameter	Year 20 Iron		
Input concentration data	concentration of surface water into SW-001	C_s1 =	1.6000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	1.6000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	1.6000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	1.6000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	1.6000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	1.6000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	1.6000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	1.6000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	1.6000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0300 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	2.8440 (mg/L)
	concentration of ground water into SW-002	C_g2 =	2.8440 (mg/L)
	concentration of ground water into SW-003	C_g3 =	2.8440 (mg/L)
	concentration of ground water into SW-004	C_g4 =	2.8440 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	2.8440 (mg/L)
	concentration of ground water into SW-005	C_g5 =	2.8440 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	2.8440 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	2.8440 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.8100 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	235.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	235.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	235.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	235.0000 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.2255 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.1500 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.8100 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	235.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	235.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	235.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	235.0000 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.2255 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	2.8440 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	2.8440 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	2.8440 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	92.2000 (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M_s1 =	3,811.21760 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	14.48734 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.84900 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	3,931.72910 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	20.74816 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	2,509.97609 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	8.18964 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	1.04865 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	1.17503 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00012 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	2,499.99561 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	24.45376 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	1.17503 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.15384 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	1.42898 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.48801 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00023 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00011 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00021 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.12067 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00108 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00232 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00640 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	28,606.06167 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	111.16267 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.51648 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00002 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.71047 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	7,411.70818 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	182.70140 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	47.18634 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	37.82804 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	15,212.72160 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	94.16768 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	17.65920 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	3,826.5539 (mg/s)
	mass flux in river at SW-002	M_r2 =	7,779.0312 (mg/s)
	mass flux in river at SW-003	M_r3 =	10,299.4207 (mg/s)
	mass flux in river at SW-004	M_r4 =	12,827.2471 (mg/s)
	mass flux in river at SW-004A	M_r4A =	41,545.6984 (mg/s)
	mass flux in river at SW-005	M_r5 =	49,140.1080 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	49,225.1224 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	64,549.6709 (mg/s)
	High Flow		
	concentration in river at SW-001	C_r1 =	1.58423 (mg/L)
	concentration in river at SW-002	C_r2 =	1.59405 (mg/L)
	concentration in river at SW-003	C_r3 =	1.59632 (mg/L)
	concentration in river at SW-004	C_r4 =	1.59819 (mg/L)
	concentration in river at SW-004A	C_r4A =	1.60103 (mg/L)
	concentration in river at SW-005	C_r5 =	1.60348 (mg/L)
	concentration in river at USGS Gage	C_r6 =	1.60401 (mg/L)
	concentration in Colby Lake	C_cl =	1.62930 (mg/L)

Partridge River Mass-Balance--Mine Site-Proposed Action

Case	Year 20		
Parameter	Hardness		
Input concentration data	concentration of surface water into SW-001	C_s1 =	110.0000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	110.0000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	110.0000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	110.0000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	110.0000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	110.0000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	110.0000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	110.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	110.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	110.0000 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	66.4200 (mg/L)
	concentration of ground water into SW-002	C_g2 =	66.4200 (mg/L)
	concentration of ground water into SW-003	C_g3 =	66.4200 (mg/L)
	concentration of ground water into SW-004	C_g4 =	66.4200 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	66.4200 (mg/L)
	concentration of ground water into SW-005	C_g5 =	66.4200 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	66.4200 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	66.4200 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	980.4055 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	5,435.6906 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	5,435.6906 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	5,435.6906 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	1,338.7158 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	43.5200 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	71.5000 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	980.4055 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	5,435.6906 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	5,435.6906 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	5,435.6906 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	1,338.7158 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	43.5200 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	66.4200 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	66.4200 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	66.4200 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	2,825.0000 (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M_s1 =	262,021.21000 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	338.34348 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	3,113.00000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	270,306.37565 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	484.56154 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	172,560.85591 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	191.26430 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	24.25593 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	27.17914 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00286 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	171,874.69823 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	571.10370 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	27.17914 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	3.55842 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	8.14039 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	94.18314 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00534 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00248 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00122 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	23.28806 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.02527 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.05414 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00002 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.19611 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	##### (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	2,596.14083 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	625.14007 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.02148 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	338.65554 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	509,554.93715 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	4,266.88722 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	3,244.06099 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	883.45242 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	##### (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	2,199.23262 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	1,214.07000 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	265,472.5535 (mg/s)
	mass flux in river at SW-002	M_r2 =	536,263.4907 (mg/s)
	mass flux in river at SW-003	M_r3 =	709,067.0488 (mg/s)
	mass flux in river at SW-004	M_r4 =	881,669.4873 (mg/s)
	mass flux in river at SW-004A	M_r4A =	2,851,896.1848 (mg/s)
	mass flux in river at SW-005	M_r5 =	3,365,718.0092 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	3,369,845.5226 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	4,419,133.4352 (mg/s)
	High Flow		
	concentration in river at SW-001	C_r1 =	109.90809 (mg/L)
	concentration in river at SW-002	C_r2 =	109.88936 (mg/L)
	concentration in river at SW-003	C_r3 =	109.89930 (mg/L)
	concentration in river at SW-004	C_r4 =	109.85038 (mg/L)
	concentration in river at SW-004A	C_r4A =	109.90244 (mg/L)
	concentration in river at SW-005	C_r5 =	109.82604 (mg/L)
	concentration in river at USGS Gage	C_r6 =	109.80739 (mg/L)
	concentration in Colby Lake	C_cl =	109.42703 (mg/L)

Partridge River Mass-Balance--Mine Site-Proposed Action

Case		Year 20	
Parameter		Potassium	
Input concentration data	concentration of surface water into SW-001	C_s1 =	1.3000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	1.3000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	1.3000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	1.3000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	1.3000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	1.3000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	1.3000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	1.3000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	1.3000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	2.7000 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	1.7500 (mg/L)
	concentration of ground water into SW-002	C_g2 =	1.7500 (mg/L)
	concentration of ground water into SW-003	C_g3 =	1.7500 (mg/L)
	concentration of ground water into SW-004	C_g4 =	1.7500 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	1.7500 (mg/L)
	concentration of ground water into SW-005	C_g5 =	1.7500 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	1.7500 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	1.7500 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	49.0000 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	38.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	38.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	38.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	38.0000 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	2.2600 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	4.4500 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	49.0000 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	38.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	38.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	38.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	38.0000 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	2.2600 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	1.7500 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	1.7500 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	1.7500 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	48.3000 (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M_s1 =	3,096.61430 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	8.91450 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	76.41000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	3,194.52989 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	12.76698 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	2,039.35557 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	5.03933 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.16957 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.19000 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00002 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	2,031.24643 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	15.04715 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.19000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.02488 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.23107 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	4.89094 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00004 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00002 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00003 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	1.20935 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00067 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00143 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00335 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	23,242.42510 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	68.40178 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	31.24408 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00107 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	21.07716 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	6,022.01289 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	112.42175 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	38.33890 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	23.27675 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	12,360.33630 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	57.94425 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	14,34810 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	3,181.9388 (mg/s)
	mass flux in river at SW-002	M_r2 =	6,389.2357 (mg/s)
	mass flux in river at SW-003	M_r3 =	8,433.9902 (mg/s)
	mass flux in river at SW-004	M_r4 =	10,486.8356 (mg/s)
	mass flux in river at SW-004A	M_r4A =	33,849.9848 (mg/s)
	mass flux in river at SW-005	M_r5 =	39,984.4194 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	40,046.0350 (mg/s)
	mass flux into Colby Lake	M_cl =	52,478.6637 (mg/s)
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C_r1 =	1.31735 (mg/L)
	concentration in river at SW-002	C_r2 =	1.30926 (mg/L)
	concentration in river at SW-003	C_r3 =	1.30720 (mg/L)
	concentration in river at SW-004	C_r4 =	1.30659 (mg/L)
	concentration in river at SW-004A	C_r4A =	1.30446 (mg/L)
	concentration in river at SW-005	C_r5 =	1.30472 (mg/L)
	concentration in river at USGS Gage	C_r6 =	1.30491 (mg/L)
	concentration in Colby Lake	C_cl =	1.36113 (mg/L)

**Partridge River Mass-Balance--Mine Site-Proposed Action**

Case		Year 20	
Parameter		Magnesium	
Input concentration data	concentration of surface water into SW-001	C_s1 =	8.0000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	8.0000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	8.0000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	8.0000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	8.0000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	8.0000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	8.0000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	8.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	8.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	10.5000 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	8.0200 (mg/L)
	concentration of ground water into SW-002	C_g2 =	8.0200 (mg/L)
	concentration of ground water into SW-003	C_g3 =	8.0200 (mg/L)
	concentration of ground water into SW-004	C_g4 =	8.0200 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	8.0200 (mg/L)
	concentration of ground water into SW-005	C_g5 =	8.0200 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	8.0200 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	8.0200 (mg/L)
	concentration of ground water seepage from East Pit	C_gcp =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	54.9183 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	1,030.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	1,030.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	1,030.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	212.0080 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	4.8800 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	9.0100 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	54.9183 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	1,030.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	1,030.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	1,030.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	212.0080 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	4.8800 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	8.0200 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	8.0200 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	8.0200 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	359.0000 (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M_s1 =	19,056.0800 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	40.85388 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	297.15000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	19,658.64550 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	58.50924 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	12,549.88043 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	23.09455 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gcp_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	4.59622 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	5.15013 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00054 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	12,499.97805 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	68.95892 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gcp_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	5.15013 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.67428 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	1.28917 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	10.56098 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00101 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00047 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00019 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	2.61135 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00305 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00654 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.02492 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	143,030.30833 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	313.47560 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	35.01781 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00120 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	42.67533 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	37,058.54088 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	515.21282 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	235.93171 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	106.67402 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	76,063.60800 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	265.55022 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	88.29600 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	19,394.0919 (mg/s)
	mass flux in river at SW-002	M_r2 =	39,111.2466 (mg/s)
	mass flux in river at SW-003	M_r3 =	51,693.9685 (mg/s)
	mass flux in river at SW-004	M_r4 =	64,283.2281 (mg/s)
	mass flux in river at SW-004A	M_r4A =	207,704.7084 (mg/s)
	mass flux in river at SW-005	M_r5 =	245,278.4601 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	245,621.0658 (mg/s)
	mass flux into Colby Lake	M_cl =	322,038.5200 (mg/s)
	High Flow		
	concentration in river at SW-001	C_r1 =	8.02933 (mg/L)
	concentration in river at SW-002	C_r2 =	8.01455 (mg/L)
	concentration in river at SW-003	C_r3 =	8.01212 (mg/L)
	concentration in river at SW-004	C_r4 =	8.00928 (mg/L)
	concentration in river at SW-004A	C_r4A =	8.00424 (mg/L)
	concentration in river at SW-005	C_r5 =	8.00363 (mg/L)
	concentration in river at USGS Gage	C_r6 =	8.00363 (mg/L)
	concentration in Colby Lake	C_cl =	8.05452 (mg/L)



Partridge River Mass-Balance--Mine Site-Proposed Action

Case	Year 20		
Parameter	Manganese		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.1500 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.1500 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.1500 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.1500 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.1500 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.1500 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.1500 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.1500 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.1500 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0086 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.1240 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.1240 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.1240 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.1240 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.1240 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.1240 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.1240 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.1240 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.4120 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	47.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	47.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	47.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	14.8813 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.1604 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.1160 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.4120 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	47.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	47.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	47.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	14.8813 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.1604 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.1240 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.1240 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.1240 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	16.4000 (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M_s1 =	357.30165 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.63166 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.24338 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	368.59960 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.90463 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	235.31026 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.35707 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.20973 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.23501 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00002 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	234.37459 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	1.06620 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.23501 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.03077 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.09049 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.34711 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00005 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00002 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00001 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.08583 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00005 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00010 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00114 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	2,681.81828 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	4.84675 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.26270 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.54943 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	694.84764 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	7.96588 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	4.42372 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	1.64932 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	1,426.19265 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	4.10576 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	1.65555 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	358.1767 (mg/s)
	mass flux in river at SW-002	M_r2 =	727.6809 (mg/s)
	mass flux in river at SW-003	M_r3 =	963.7930 (mg/s)
	mass flux in river at SW-004	M_r4 =	1,200.0244 (mg/s)
	mass flux in river at SW-004A	M_r4A =	3,887.5016 (mg/s)
	mass flux in river at SW-005	M_r5 =	4,590.3151 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	4,596.3881 (mg/s)
	mass flux into Colby Lake	M_cl =	6,028.3421 (mg/s)
	High Flow		
	concentration in river at SW-001	C_r1 =	0.14829 (mg/L)
	concentration in river at SW-002	C_r2 =	0.14911 (mg/L)
	concentration in river at SW-003	C_r3 =	0.14938 (mg/L)
	concentration in river at SW-004	C_r4 =	0.14952 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.14981 (mg/L)
	concentration in river at SW-005	C_r5 =	0.14979 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.14977 (mg/L)
	concentration in Colby Lake	C_cl =	0.14888 (mg/L)



**Partridge River Mass-Balance--Mine Site-Proposed Action**

Case	Year 20		
Parameter	Sodium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	2.5000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	2.5000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	2.5000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	2.5000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	2.5000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	2.5000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	2.5000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	2.5000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	2.5000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	4.8000 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	13.3300 (mg/L)
	concentration of ground water into SW-002	C_g2 =	13.3300 (mg/L)
	concentration of ground water into SW-003	C_g3 =	13.3300 (mg/L)
	concentration of ground water into SW-004	C_g4 =	13.3300 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	13.3300 (mg/L)
	concentration of ground water into SW-005	C_g5 =	13.3300 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	13.3300 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	13.3300 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	307.8723 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	338.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	338.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	338.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	80.1098 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	4.6000 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	7.1900 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	307.8723 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	338.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	338.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	338.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	80.1098 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	4.6000 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	13.3300 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	13.3300 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	13.3300 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	451.0000 (mg/L)
Convert concentration to mass flux	<b>High Flow</b>		
	mass flux of surface water into SW-001	M_s1 =	5,955.02750 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	67.90302 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	135.84000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	6,143.32672 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	97.24790 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	3,921.83763 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	38.38532 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	1,50827 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	1,69004 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00018 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	3,906.24314 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	114.61626 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	1,69004 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.22127 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.48713 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	9.95502 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00033 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00015 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00007 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	2.46151 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00507 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.01087 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.03131 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	44,696.97135 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	521.02615 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	196.30995 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00675 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	34.05501 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	11,580.79403 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	856.33253 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	73.72866 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	177.30233 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	23,769.87750 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	441.36963 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	27,59250 (mg/s)
Mass balance at each node	<b>High Flow</b>		
	mass flux in river at SW-001	M_r1 =	6,158.7705 (mg/s)
	mass flux in river at SW-002	M_r2 =	12,399.3451 (mg/s)
	mass flux in river at SW-003	M_r3 =	16,362.7666 (mg/s)
	mass flux in river at SW-004	M_r4 =	20,398.4889 (mg/s)
	mass flux in river at SW-004A	M_r4A =	65,646.8582 (mg/s)
	mass flux in river at SW-005	M_r5 =	78,283.9847 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	78,535.0157 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	102,773.8553 (mg/s)
	<b>High Flow</b>		
	concentration in river at SW-001	C_r1 =	2.54979 (mg/L)
	concentration in river at SW-002	C_r2 =	2.54083 (mg/L)
	concentration in river at SW-003	C_r3 =	2.53609 (mg/L)
	concentration in river at SW-004	C_r4 =	2.54152 (mg/L)
	concentration in river at SW-004A	C_r4A =	2.53752 (mg/L)
	concentration in river at SW-005	C_r5 =	2.55447 (mg/L)
	concentration in river at USGS Gage	C_r6 =	2.55909 (mg/L)
	concentration in Colby Lake	C_cl =	3.09841 (mg/L)

Partridge River Mass-Balance--Mine Site-Proposed Action

Case Parameter	Year 20 Nickel		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0016 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0016 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0016 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0016 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0016 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0016 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0016 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0016 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0033 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0016 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0163 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0163 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0163 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0163 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0163 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0163 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0163 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0163 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.1223 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	762.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	762.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	762.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	80.4284 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0080 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0190 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.1223 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	762.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	762.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	762.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	80.4284 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0080 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0163 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0163 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0163 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	176.0000 (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M_s1 =	3.71594 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.08293 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.04387 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	3.83344 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.11877 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	2.44723 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.04688 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	3.40031 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	3.81010 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00040 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	2.43750 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.13998 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	3.81010 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.49884 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.48906 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.01725 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00075 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00035 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00007 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00426 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00001 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00001 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.01222 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	27.89091 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.63633 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.07795 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.08999 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	7.22642 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	1.04584 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.04601 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.21654 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	14.83240 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.53905 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.03642 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	3.8427 (mg/s)
	mass flux in river at SW-002	M_r2 =	7.7949 (mg/s)
	mass flux in river at SW-003	M_r3 =	17.4998 (mg/s)
	mass flux in river at SW-004	M_r4 =	24.9106 (mg/s)
	mass flux in river at SW-004A	M_r4A =	53.6058 (mg/s)
	mass flux in river at SW-005	M_r5 =	61.8781 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	62.1406 (mg/s)
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C_r1 =	0.00159 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00160 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00271 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00310 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00207 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00202 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00202 (mg/L)
	concentration in Colby Lake	C_cl =	0.00415 (mg/L)

Partridge River Mass-Balance--Mine Site-Proposed Action

Case Parameter	Year 20 Lead		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0005 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0005 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0005 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0005 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0005 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0005 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0005 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0005 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0005 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0002 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0011 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0011 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0011 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0011 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0011 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0011 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0011 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0011 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0146 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.0528 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0528 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0528 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0528 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0007 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0146 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.0528 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0528 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0528 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0528 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0007 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0011 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0011 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0011 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0510 (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M_s1 =	1.19101 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00571 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.00425 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	1.22867 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.00817 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.78437 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00323 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00024 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00026 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.78125 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.00963 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00026 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00003 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00032 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00146 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00036 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00000 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	8.93939 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.04378 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.00931 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	2.31616 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.07195 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.01475 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.01490 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	4.75398 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.03708 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00552 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	1.2010 (mg/s)
	mass flux in river at SW-002	M_r2 =	2.4378 (mg/s)
	mass flux in river at SW-003	M_r3 =	3.2259 (mg/s)
	mass flux in river at SW-004	M_r4 =	4.0182 (mg/s)
	mass flux in river at SW-004A	M_r4A =	13.0117 (mg/s)
	mass flux in river at SW-005	M_r5 =	15.3998 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	15.4294 (mg/s)
	mass flux into Colby Lake	M_cl =	20.2260 (mg/s)
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C_r1 =	0.00050 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00050 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00050 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00050 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00050 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00050 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00050 (mg/L)
	concentration in Colby Lake	C_cl =	0.00053 (mg/L)

Partridge River Mass-Balance--Mine Site-Proposed Action

Case Parameter	Year 20 Antimony		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0015 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0015 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0015 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0015 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0015 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0015 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0015 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0015 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0015 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0015 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0015 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0015 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0015 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0015 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0015 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0015 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0015 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0015 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0800 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.0800 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0800 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0800 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0337 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0003 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0004 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0800 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.0800 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0800 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0800 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0337 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0003 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0015 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0015 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0015 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.1089 (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M_s1 =	3.57302 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00764 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.04245 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	3.68600 (mg/s)
	mass flux of surface water into SW-002	M_g2 =	0.01094 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	2.35310 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00432 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00036 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00040 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	2.34375 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.01290 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00040 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00005 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00021 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00065 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00016 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00001 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	26.81818 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.05863 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.05101 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.00189 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	6.94848 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.09636 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.04424 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.01995 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	14.26193 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.04967 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.01656 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	3.6231 (mg/s)
	mass flux in river at SW-002	M_r2 =	7.3200 (mg/s)
	mass flux in river at SW-003	M_r3 =	9.6782 (mg/s)
	mass flux in river at SW-004	M_r4 =	12.0363 (mg/s)
	mass flux in river at SW-004A	M_r4A =	38.9661 (mg/s)
	mass flux in river at SW-005	M_r5 =	46.0109 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	46.0751 (mg/s)
	mass flux into Colby Lake	M_cl =	60.4032 (mg/s)
	High Flow		
	concentration in river at SW-001	C_r1 =	0.00150 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00150 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00150 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00150 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00150 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00150 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00150 (mg/L)
	concentration in Colby Lake	C_cl =	0.00156 (mg/L)

# Partridge River Mass-Balance--Mine Site-Proposed Action

Case Parameter	Year 20 Selenium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0005 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0005 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0005 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0005 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0005 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0005 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0005 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0005 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0005 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0005 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0019 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0019 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0019 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0019 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0019 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0019 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0019 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0019 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0029 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.0029 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0029 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0029 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0029 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0004 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0019 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0029 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.0029 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0029 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0029 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0029 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0004 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0019 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0019 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0019 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0130 (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M_s1 =	1.19101 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00973 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.01415 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	1.22867 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.01393 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.78437 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00550 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.78125 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.01642 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00002 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00096 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00024 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00000 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	8.93939 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.07466 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.00185 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.00900 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	2.31616 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.12270 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.01475 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.02540 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	4.75398 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.06324 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00552 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	1.2149 (mg/s)
	mass flux in river at SW-002	M_r2 =	2.4575 (mg/s)
	mass flux in river at SW-003	M_r3 =	3.2474 (mg/s)
	mass flux in river at SW-004	M_r4 =	4.0463 (mg/s)
	mass flux in river at SW-004A	M_r4A =	13.0712 (mg/s)
	mass flux in river at SW-005	M_r5 =	15.5100 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	15.5502 (mg/s)
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C_r1 =	0.00050 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00050 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00050 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00050 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00050 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00051 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00051 (mg/L)
	concentration in Colby Lake	C_cl =	0.00054 (mg/L)

Partridge River Mass-Balance--Mine Site-Proposed Action

Case Parameter	Year 20 sulfate		
Input concentration data	concentration of surface water into SW-001	C_s1 =	9.0000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	9.0000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	9.0000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	9.0000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	9.0000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	9.0000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	9.0000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	9.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	9.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	22.0000 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	16.1300 (mg/L)
	concentration of ground water into SW-002	C_g2 =	16.1300 (mg/L)
	concentration of ground water into SW-003	C_g3 =	16.1300 (mg/L)
	concentration of ground water into SW-004	C_g4 =	16.1300 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	16.1300 (mg/L)
	concentration of ground water into SW-005	C_g5 =	16.1300 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	16.1300 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	16.1300 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	680.6093 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	9,600.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	9,600.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	9,600.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	8,410.4874 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	35.1700 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	68.3000 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	680.6093 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	9,600.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	9,600.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	9,600.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	8,410.4874 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	35.1700 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	16.1300 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	16.1300 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	16.1300 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	5,020.0000 (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M_s1 =	21,438.09900 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	82.16622 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	622.60000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	22,115.97619 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	117.67506 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	14,118.61548 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	46.44826 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	42.83852 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	48.00121 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00505 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	14,062.47531 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	138.69170 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	48.00121 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	6.28454 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	51.14203 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	76.11262 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00942 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00438 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00767 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	18.81988 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00614 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.01315 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.34849 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	160,909.09687 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	630.46901 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	433.97980 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.01491 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	323.49893 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	41,690.85849 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	1,036.20733 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	265.42317 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	214.54513 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	85,571.55900 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	534.08043 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	99.33300 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	22,142.8652 (mg/s)
	mass flux in river at SW-002	M_r2 =	44,376.5165 (mg/s)
	mass flux in river at SW-003	M_r3 =	58,632.4250 (mg/s)
	mass flux in river at SW-004	M_r4 =	73,034.3466 (mg/s)
	mass flux in river at SW-004A	M_r4A =	235,331.4051 (mg/s)
	mass flux in river at SW-005	M_r5 =	278,058.4719 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	278,538.4402 (mg/s)
	mass flux into Colby Lake	M_cl =	364,743.4126 (mg/s)
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C_r1 =	9.16735 (mg/L)
	concentration in river at SW-002	C_r2 =	9.09349 (mg/L)
	concentration in river at SW-003	C_r3 =	9.08752 (mg/L)
	concentration in river at SW-004	C_r4 =	9.09961 (mg/L)
	concentration in river at SW-004A	C_r4A =	9.06888 (mg/L)
	concentration in river at SW-005	C_r5 =	9.07327 (mg/L)
	concentration in river at USGS Gage	C_r6 =	9.07626 (mg/L)
	concentration in Colby Lake	C_cl =	9.88589 (mg/L)



**Partridge River Mass-Balance--Mine Site-Proposed Action**

Case Parameter	Year 20 Thallium			
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0004	(mg/L)
	concentration of surface water into SW-002	C s2 =	0.0004	(mg/L)
	concentration of surface water into SW-003	C s3 =	0.0004	(mg/L)
	concentration of surface water into SW-004	C s4 =	0.0004	(mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0004	(mg/L)
	concentration of surface water into SW-005	C s5 =	0.0004	(mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0004	(mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0004	(mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0004	(mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0003	(mg/L)
	concentration of West Pit overflow	C sms =	#N/A	(mg/L)
	concentration of ground water into SW-001	C g1 =	0.0000	(mg/L)
	concentration of ground water into SW-002	C g2 =	0.0000	(mg/L)
	concentration of ground water into SW-003	C g3 =	0.0000	(mg/L)
	concentration of ground water into SW-004	C g4 =	0.0000	(mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0000	(mg/L)
	concentration of ground water into SW-005	C g5 =	0.0000	(mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0000	(mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0000	(mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A	(mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A	(mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	0.0000	(mg/L)
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	0.0001	(mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0001	(mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0001	(mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.0001	(mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0000	(mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	-	(mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	0.0000	(mg/L)
	concentration of liner leakage from Cat 3 sumps	C gC3s =	0.0001	(mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.0001	(mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0001	(mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0001	(mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0000	(mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A	(mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0000	(mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0000	(mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0000	(mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0088	(mg/L)
Convert concentration to mass flux	High Flow			
	mass flux of surface water into SW-001	M s1 =	0.95280	(mg/s)
	mass flux of ground water into SW-001	M g1 =	0.00002	(mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.00809	(mg/s)
	mass flux of surface water into SW-002	M s2 =	0.98293	(mg/s)
	mass flux of ground water into SW-002	M g2 =	0.00003	(mg/s)
	mass flux of surface water into SW-003	M s3 =	0.62749	(mg/s)
	mass flux of ground water into SW-003	M g3 =	0.00001	(mg/s)
	mass flux of seepage from East Pit to SW-003	M gep 003 =	#N/A	(mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M gC3 003 =	0.00000	(mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO 003 =	0.00000	(mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M gC3s 003 =	0.00000	(mg/s)
	mass flux of surface water into SW-004	M s4 =	0.62500	(mg/s)
	mass flux of ground water into SW-004	M g4 =	0.00003	(mg/s)
	mass flux of seepage from East Pit to SW-004	M gep 004 =	#N/A	(mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A	(mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M gC3 004 =	-	(mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO 004 =	0.00000	(mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00000	(mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00000	(mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.00009	(mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs 004 =	0.00000	(mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000	(mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000	(mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.00002	(mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00000	(mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00000	(mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000	(mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00000	(mg/s)
	mass flux of surface water into SW-004A	M s4A =	7.15152	(mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.00016	(mg/s)
	mass flux of West Pit overflow	M sms =	#N/A	(mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M gC12 =	0.00001	(mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M gC12s =	0.00000	(mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M gO12 =	-	(mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A	(mg/s)
	mass flux of surface water into SW-005	M s5 =	1.85293	(mg/s)
	mass flux of ground water into SW-005	M g5 =	0.00026	(mg/s)
	mass flux of surface water into USGS Gage	M s6 =	0.01180	(mg/s)
mass flux of ground water into USGS Gage	M g6 =	0.00005	(mg/s)	
mass flux of surface water into Colby Lake	M scl =	3.80318	(mg/s)	
mass flux of ground water into Colby Lake	M gcl =	0.00013	(mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.00441	(mg/s)	
Mass balance at each node	High Flow			
	mass flux in river at SW-001	M r1 =	0.9609	(mg/s)
	mass flux in river at SW-002	M r2 =	1.9439	(mg/s)
	mass flux in river at SW-003	M r3 =	2.5714	(mg/s)
	mass flux in river at SW-004	M r4 =	3.1965	(mg/s)
	mass flux in river at SW-004A	M r4A =	10.3482	(mg/s)
	mass flux in river at SW-005	M r5 =	12.2014	(mg/s)
	mass flux in river at USGS Gage	M r6 =	12.2132	(mg/s)
Convert mass flux to concentration	High Flow			
	concentration in river at SW-001	C r1 =	0.00040	(mg/L)
	concentration in river at SW-002	C r2 =	0.00040	(mg/L)
	concentration in river at SW-003	C r3 =	0.00040	(mg/L)
	concentration in river at SW-004	C r4 =	0.00040	(mg/L)
	concentration in river at SW-004A	C r4A =	0.00040	(mg/L)
	concentration in river at SW-005	C r5 =	0.00040	(mg/L)
	concentration in river at USGS Gage	C r6 =	0.00040	(mg/L)
	concentration in Colby Lake	C cl =	0.00039	(mg/L)

Partridge River Mass-Balance--Mine Site-Proposed Action

Case		Year 20	
Parameter		Vanadium	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0009 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0009 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0009 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0009 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0009 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0009 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0009 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0009 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0009 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0043 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0043 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0043 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0043 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0043 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0043 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0043 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0043 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0043 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.4508 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	4.9265 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	6.6185 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.4089 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0164 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0017 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0014 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.4508 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	4.9265 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	6.6185 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.4089 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0164 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0017 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0043 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0043 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0043 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	9.6830 (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M_s1 =	2.14381 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.02190 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.12169 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	2.21160 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.03137 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	1.41186 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.01238 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.02198 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.03309 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	1.40625 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.03697 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.03309 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00027 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00010 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00374 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00093 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00067 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	16.09091 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.16807 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.28743 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.00663 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	4.16909 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.27624 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.02654 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.05719 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	8.55716 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.14238 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00993 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	2.2874 (mg/s)
	mass flux in river at SW-002	M_r2 =	4.5304 (mg/s)
	mass flux in river at SW-003	M_r3 =	6.0097 (mg/s)
	mass flux in river at SW-004	M_r4 =	7.4917 (mg/s)
	mass flux in river at SW-004A	M_r4A =	24.0448 (mg/s)
	mass flux in river at SW-005	M_r5 =	28.4901 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	28.5738 (mg/s)
	mass flux into Colby Lake	M_cl =	37.2833 (mg/s)
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C_r1 =	0.00095 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00093 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00093 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00093 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00093 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00093 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00093 (mg/L)
	concentration in Colby Lake	C_cl =	0.00086 (mg/L)

Partridge River Mass-Balance--Mine Site-Proposed Action

Case	Year 20		
Parameter	Zinc		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0160 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0160 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0160 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0160 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0160 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0160 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0160 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0160 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0620 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0073 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0275 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0275 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0275 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0275 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0275 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0275 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0275 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0275 (mg/L)
	concentration of ground water seepage from East Pit	C_ggp =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0900 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	26.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	26.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	26.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	26.0000 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0046 (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0030 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0900 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	26.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	26.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	26.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	26.0000 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0046 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0275 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0275 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0275 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	10.3000 (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M_s1 =	38.11218 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.14009 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.20744 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	39.31729 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.20062 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	25.09976 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.07919 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_ggp_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.11602 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.13000 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00001 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	24.99996 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.23646 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_ggp_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.13000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.01702 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.15810 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00987 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00003 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00001 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00002 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00244 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00001 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00002 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00072 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	286.06062 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	1.07489 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.05739 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.01421 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	74.11708 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	1.76663 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.47186 (mg/s)
mass flux of ground water into USGS Gage	M_g6 =	0.36578 (mg/s)	
mass flux of surface water into Colby Lake	M_scl =	152.12722 (mg/s)	
mass flux of ground water into Colby Lake	M_gcl =	0.91055 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.68429 (mg/s)	
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	38.4507 (mg/s)
	mass flux in river at SW-002	M_r2 =	77.9776 (mg/s)
	mass flux in river at SW-003	M_r3 =	103.4026 (mg/s)
	mass flux in river at SW-004	M_r4 =	128.9573 (mg/s)
	mass flux in river at SW-004A	M_r4A =	416.1644 (mg/s)
	mass flux in river at SW-005	M_r5 =	492.0481 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	492.8857 (mg/s)
	mass flux into Colby Lake	M_cl =	646.6078 (mg/s)
	High Flow		
	concentration in river at SW-001	C_r1 =	0.01592 (mg/L)
	concentration in river at SW-002	C_r2 =	0.01598 (mg/L)
	concentration in river at SW-003	C_r3 =	0.01603 (mg/L)
	concentration in river at SW-004	C_r4 =	0.01607 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.01604 (mg/L)
	concentration in river at SW-005	C_r5 =	0.01606 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.01606 (mg/L)
	concentration in Colby Lake	C_cl =	0.01654 (mg/L)

***Appendix H.6***  
***Partridge River***  
***Proposed Action***  
***Closure***

## Partridge River Mass-Balance Model - Mine Site - Proposed Action

### FLOWS

Case	Closure			
Flows	Low Flow Conditions (no surface runoff)			
Total flow in Partridge River	flow in river at SW-001	Q_r1_L =	1.18	(cfs)
	flow in river at SW-002	Q_r2_L =	1.44	(cfs)
	flow in river at SW-003	Q_r3_L =	1.55	(cfs)
	flow in river at SW-004	Q_r4_L =	1.87	(cfs)
	flow in river at SW-004A	Q_r4a_L =	3.30	(cfs)
	flow in river at SW-005	Q_r5_L =	5.57	(cfs)
	flow in river at USGS Gage	Q_r6_L =	6.04	(cfs)
	total flow into Colby Lake	Q_cl_L =	7.60	(cfs)
	flow check	Q_ck_L =	7.60	(cfs)
Input flow data	surface water flow into SW-001	Q_s1_L =	-	(cfs)
	surface water flow into SW-002	Q_s2_L =	-	(cfs)
	surface water flow into SW-003	Q_s3_L =	-	(cfs)
	surface water flow into SW-004	Q_s4_L =	-	(cfs)
	surface water flow into SW-004A	Q_s4a_L =	-	(cfs)
	surface water flow into SW-005	Q_s5_L =	-	(cfs)
	surface water flow into USGS Gage	Q_s6_L =	-	(cfs)
	surface water flow into Colby Lake	Q_scl_L =	-	(cfs)
	surface water inflow from Hoyt Lakes WWTP	Q_shl_L =	0.39	(cfs)
	surface water inflow from discharges upstream of PM-1	Q_sns_L =	1.00	(cfs)
	West Pit Overflow	Q_sms_L =	-	(cfs)
	ground water flow into SW-001	Q_g1_L =	0.18	(cfs)
	ground water flow into SW-002	Q_g2_L =	0.26	(cfs)
	ground water flow into SW-003	Q_g3_L =	0.10	(cfs)
	ground water flow into SW-004	Q_g4_L =	0.30	(cfs)
	ground water flow into SW-004A	Q_g4a_L =	1.38	(cfs)
	ground water flow into SW-005	Q_g5_L =	2.27	(cfs)
	ground water flow into USGS Gage	Q_g6_L =	0.47	(cfs)
	ground water flow into Colby Lake	Q_gcl_L =	1.17	(cfs)
	ground water seepage from East Pit to SW-003	Q_gep_003_L =	0.0112	(cfs)
	ground water seepage from East Pit to SW-004	Q_gep_004_L =	0.0112	(cfs)
	ground water seepage from West Pit	Q_gwp_L =	-	(cfs)
	ground water liner leakage from Cat 1/2 stockpile	Q_gC12_L =	0.0061	(cfs)
	ground water liner leakage from Cat 3 stockpile to SW-003	Q_gC3_003_L =	0.0000	(cfs)
	ground water liner leakage from Cat 3 stockpile to SW-004	Q_gC3_004_L =	-	(cfs)
	ground water liner leakage from Cat 3LO stockpile to SW-003	Q_gC3LO_003_L =	0.0000	(cfs)
	ground water liner leakage from Cat 3LO stockpile to SW-004	Q_gC3LO_004_L =	0.0000	(cfs)
	ground water liner leakage from Cat 4 stockpile	Q_gC4_L =	0.0000	(cfs)
	ground water liner leakage from LO SP	Q_gC4LO_L =	-	(cfs)
	ground water seepage from Overburden Storage	Q_gOS_L =	-	(cfs)
	ground water seepage from Overburden (Cat 1/2)	Q_gO12_L =	0.0457	(cfs)
	ground water liner leakage from Cat 1/2 sumps	Q_gC12s_L =	0.0000	(cfs)
	ground water liner leakage from Cat 3 sumps	Q_gC3s_L =	0.0000	(cfs)
	ground water liner leakage from Cat 3LO sumps	Q_gC3LOs_L =	0.0000	(cfs)
	ground water liner leakage from Cat 4 sumps	Q_gC4s_L =	0.0000	(cfs)
	ground water liner leakage from LO SP sumps	Q_gC4LOs_L =	-	(cfs)
	ground water seepage from Overburden pond - PW1	Q_gOp1_L =	-	(cfs)
	ground water seepage from Overburden pond - PW7	Q_gOp7_L =	-	(cfs)
	ground water leakage from Haul Road pond - PW2	Q_gHRp2_L =	-	(cfs)
	ground water leakage from Haul Road pond - PW4	Q_gHRp4_L =	-	(cfs)
	ground water leakage from RTH pond - PW3	Q_gRTHp_L =	-	(cfs)
	ground water liner leakage from WWTF pond	Q_gWTFp_L =	-	(cfs)

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case	Closure			
Parameter	Silver			
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0001 (mg/L)	
	concentration of surface water into SW-002	C s2 =	0.0001 (mg/L)	
	concentration of surface water into SW-003	C s3 =	0.0001 (mg/L)	
	concentration of surface water into SW-004	C s4 =	0.0001 (mg/L)	
	concentration of surface water into SW-004A	C s4A =	0.0001 (mg/L)	
	concentration of surface water into SW-005	C s5 =	0.0001 (mg/L)	
	concentration of surface water into USGS Gage	C s6 =	0.0001 (mg/L)	
	concentration of surface water into Colby Lake	C scl =	0.0001 (mg/L)	
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0001 (mg/L)	
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0001 (mg/L)	
	concentration of West Pit Overflow	C sms =	#N/A (mg/L)	
	concentration of ground water into SW-001	C g1 =	0.0006 (mg/L)	
	concentration of ground water into SW-002	C g2 =	0.0006 (mg/L)	
	concentration of ground water into SW-003	C g3 =	0.0006 (mg/L)	
	concentration of ground water into SW-004	C g4 =	0.0006 (mg/L)	
	concentration of ground water into SW-004A	C g4A =	0.0006 (mg/L)	
	concentration of ground water into SW-005	C g5 =	0.0006 (mg/L)	
	concentration of ground water into USGS Gage	C g6 =	0.0006 (mg/L)	
	concentration of ground water into Colby Lake	C gcl =	0.0006 (mg/L)	
	concentration of ground water seepage from East Pit	C gep =	0.0012 (mg/L)	
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)	
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	0.0007 (mg/L)	
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	0.0007 (mg/L)	
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0007 (mg/L)	
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0007 (mg/L)	
	concentration of liner leakage from LOSP	C gC4LO =	#N/A (mg/L)	
	concentration of seepage from Overburden (Storage)	C gOS =	#N/A (mg/L)	
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	- (mg/L)	
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	0.0007 (mg/L)	
	concentration of liner leakage from Cat 3 sumps	C gC3s =	0.0007 (mg/L)	
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.0007 (mg/L)	
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0007 (mg/L)	
	concentration of liner leakage from LOSP sumps	C gC4LOs =	#N/A (mg/L)	
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	- (mg/L)	
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)	
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0006 (mg/L)	
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0006 (mg/L)	
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0006 (mg/L)	
	concentration of liner leakage from WWTP pond	C gWTFp =	#N/A (mg/L)	
	Convert concentration to mass flux	Low Flow		
		mass flux of surface water into SW-001	M s1 =	- (mg/s)
		mass flux of ground water into SW-001	M g1 =	0.00280 (mg/s)
		mass flux of surface discharges from upstream of PM-1	M sns =	0.00340 (mg/s)
mass flux of surface water into SW-002		M s2 =	- (mg/s)	
mass flux of ground water into SW-002		M g2 =	0.00401 (mg/s)	
mass flux of surface water into SW-003		M s3 =	- (mg/s)	
mass flux of ground water into SW-003		M g3 =	0.00158 (mg/s)	
mass flux of seepage from East Pit to SW-003		M gep 003 =	0.00038 (mg/s)	
mass flux of liner leakage from Cat 3 stockpile to SW-003		M gC3 003 =	0.00000 (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-003		M gC3LO 003 =	0.00000 (mg/s)	
mass flux of liner leakage from Cat 3 sumps to SW-003		M gC3s 003 =	0.00000 (mg/s)	
Mass balance at each node	mass flux of surface water into SW-004	M s4 =	- (mg/s)	
	mass flux of ground water into SW-004	M g4 =	0.00473 (mg/s)	
	mass flux of seepage from East Pit to SW-004	M gep 004 =	0.00038 (mg/s)	
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)	
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M gC3 004 =	- (mg/s)	
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO 004 =	0.00000 (mg/s)	
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00000 (mg/s)	
	mass flux of liner leakage from LOSP	M gC4LO =	#N/A (mg/s)	
	mass flux of seepage from Overburden (Storage)	M gOS =	#N/A (mg/s)	
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs 004 =	0.00000 (mg/s)	
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)	
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	#N/A (mg/s)	
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	- (mg/s)	
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	- (mg/s)	
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	- (mg/s)	
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	- (mg/s)	
	mass flux of liner leakage from WWTF pond	M gWTFp =	#N/A (mg/s)	
	mass flux of surface water into SW-004A	M s4A =	- (mg/s)	
	mass flux of ground water into SW-004A	M g4A =	0.02150 (mg/s)	
	mass flux of West Pit Overflow	M sms =	#N/A (mg/s)	
	mass flux of liner leakage from Cat 1/2 stockpile	M gC12 =	0.00012 (mg/s)	
	mass flux of liner leakage from Cat 1/2 sumps	M gC12s =	0.00000 (mg/s)	
	mass flux of seepage from Overburden (Cat 1/2)	M gO12 =	- (mg/s)	
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)	
	mass flux of surface water into SW-005	M s5 =	- (mg/s)	
	mass flux of ground water into SW-005	M g5 =	0.03533 (mg/s)	
	mass flux of surface water into USGS Gage	M s6 =	- (mg/s)	
mass flux of ground water into USGS Gage	M g6 =	0.00732 (mg/s)		
mass flux of surface water into Colby Lake	M scl =	- (mg/s)		
mass flux of ground water into Colby Lake	M gcl =	0.01821 (mg/s)		
mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.00110 (mg/s)		
Convert mass flux to concentration	Low Flow			
	concentration in river at SW-001	C r1 =	0.00019 (mg/L)	
	concentration in river at SW-002	C r2 =	0.00025 (mg/L)	
	concentration in river at SW-003	C r3 =	0.00028 (mg/L)	
	concentration in river at SW-004	C r4 =	0.00033 (mg/L)	
	concentration in river at SW-004A	C r4A =	0.00042 (mg/L)	
	concentration in river at SW-005	C r5 =	0.00047 (mg/L)	
	concentration in river at USGS Gage	C r6 =	0.00048 (mg/L)	
	concentration in Colby Lake	C cl =	0.00015 (mg/L)	



Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case Parameter	Closure Aluminum		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0700 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0700 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0700 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0700 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0700 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0700 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0700 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0700 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0700 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0173 (mg/L)
	concentration of West Pit Overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.1250 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.1250 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.1250 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.1250 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.1250 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.1250 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.1250 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.1250 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	1.6698 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	1.6800 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	83.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	83.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	83.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.1400 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	1.6800 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	83.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	83.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	83.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.4106 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.1250 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.1250 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.1250 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.63675 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.48959 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.91193 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.35995 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.52689 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.03472 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00726 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00004 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	1.07480 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.52689 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00726 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00069 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00008 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00004 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	4.88584 (mg/s)
	mass flux of West Pit Overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.29239 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00004 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.18099 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	8.03013 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	1.66263 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	4.13888 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.77259 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	1.1263 (mg/s)
	mass flux in river at SW-002	M_r2 =	2.0383 (mg/s)
	mass flux in river at SW-003	M_r3 =	2.9671 (mg/s)
	mass flux in river at SW-004	M_r4 =	4.5769 (mg/s)
	mass flux in river at SW-004A	M_r4A =	9.9362 (mg/s)
	mass flux in river at SW-005	M_r5 =	17.9663 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	19.6289 (mg/s)
	mass flux into Colby Lake	M_cl =	24.5404 (mg/s)
	Low Flow		
	concentration in river at SW-001	C_r1 =	0.03373 (mg/L)
	concentration in river at SW-002	C_r2 =	0.05009 (mg/L)
	concentration in river at SW-003	C_r3 =	0.06761 (mg/L)
	concentration in river at SW-004	C_r4 =	0.08669 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.10644 (mg/L)
	concentration in river at SW-005	C_r5 =	0.11400 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.11486 (mg/L)
	concentration in Colby Lake	C_cl =	0.07634 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case Parameter	Closure Arsenic		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0021 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0021 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0021 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0021 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0021 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0021 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0021 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0021 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0021 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0065 (mg/L)
	concentration of West Pit Overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0022 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0022 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0022 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0022 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0022 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0022 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0022 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0022 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.0873 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.7100 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.7100 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.7100 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.7100 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0027 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.7100 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.7100 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.7100 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.7100 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0016 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0022 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0022 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0022 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Low Flow			
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.01100 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.18395 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.01576 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00622 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.02754 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00030 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00006 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.01857 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.02754 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00006 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00001 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.08443 (mg/s)
	mass flux of West Pit Overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.12357 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00002 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.00349 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.13876 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.02873 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.07152 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.02329 (mg/s)
Low Flow			
Mass balance at each node	mass flux in river at SW-001	M_r1 =	0.1950 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.2107 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.2448 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.2910 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.5025 (mg/s)
	mass flux in river at SW-005	M_r5 =	0.6413 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	0.6700 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	0.7648 (mg/s)
	concentration in river at SW-001	C_r1 =	0.00584 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00518 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00558 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00551 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00538 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00407 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00392 (mg/L)
	concentration in Colby Lake	C_cl =	0.00232 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case Parameter	Closure Boron		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0450 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0450 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0450 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0450 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0450 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0450 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0450 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0450 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0450 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0960 (mg/L)
	concentration of West Pit Overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0870 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0870 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0870 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0870 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0870 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0870 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0870 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0870 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	0.3230 (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	0.7600 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	0.7600 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.7600 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.7600 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	0.0370 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	0.7600 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C gC3s =	0.7600 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.7600 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.7600 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0622 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0870 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0870 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0870 (mg/L)
	concentration of liner leakage from WWTF pond	C gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M s1 =	- (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.44318 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	2.71680 (mg/s)
	mass flux of surface water into SW-002	M s2 =	- (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.63470 (mg/s)
	mass flux of surface water into SW-003	M s3 =	- (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.25053 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	0.10192 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M gC3_003 =	0.00032 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00007 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	- (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.74806 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	0.10192 (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00007 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00001 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M g4A =	3.40055 (mg/s)
	mass flux of West Pit Overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M gC12 =	0.13227 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M gC12s =	0.00002 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M gO12 =	0.04783 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	- (mg/s)
	mass flux of ground water into SW-005	M g5 =	5.58897 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	1.15719 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	2.88066 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.49667 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M r1 =	3.1600 (mg/s)
	mass flux in river at SW-002	M r2 =	3.7947 (mg/s)
	mass flux in river at SW-003	M r3 =	4.1475 (mg/s)
	mass flux in river at SW-004	M r4 =	4.9976 (mg/s)
	mass flux in river at SW-004A	M r4A =	8.5782 (mg/s)
	mass flux in river at SW-005	M r5 =	14.1672 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M r6 =	15.3244 (mg/s)
	mass flux into Colby Lake	M cl =	18.7017 (mg/s)
	Low Flow		
	concentration in river at SW-001	C r1 =	0.09463 (mg/L)
	concentration in river at SW-002	C r2 =	0.09326 (mg/L)
	concentration in river at SW-003	C r3 =	0.09451 (mg/L)
	concentration in river at SW-004	C r4 =	0.09465 (mg/L)
	concentration in river at SW-004A	C r4A =	0.09189 (mg/L)
	concentration in river at SW-005	C r5 =	0.08990 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.08967 (mg/L)
	concentration in Colby Lake	C cl =	0.05102 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case Parameter	Closure Barium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0077 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0077 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0077 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0077 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0077 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0077 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0077 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0077 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0077 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0050 (mg/L)
	concentration of West Pit Overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0219 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0219 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0219 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0219 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0219 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0219 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0219 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0219 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.1539 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.1900 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.1900 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.1900 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.1900 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0140 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.1900 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.1900 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.1900 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.1900 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0168 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0219 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0219 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0219 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Low Flow			
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.11166 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.14150 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.15992 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.06312 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.04858 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00008 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00002 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.18848 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.04858 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00002 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.85678 (mg/s)
	mass flux of West Pit Overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.03307 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.01810 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	1.40816 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.29156 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.72579 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.08476 (mg/s)
Low Flow			
Mass balance at each node	mass flux in river at SW-001	M_r1 =	0.2532 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.4131 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.5249 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.7619 (mg/s)
	mass flux in river at SW-004A	M_r4A =	1.6699 (mg/s)
	mass flux in river at SW-005	M_r5 =	3.0781 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	3.3696 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	4.1802 (mg/s)
	concentration in river at SW-001	C_r1 =	0.00758 (mg/L)
	concentration in river at SW-002	C_r2 =	0.01015 (mg/L)
	concentration in river at SW-003	C_r3 =	0.01196 (mg/L)
	concentration in river at SW-004	C_r4 =	0.01443 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.01789 (mg/L)
	concentration in river at SW-005	C_r5 =	0.01953 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.01972 (mg/L)
	concentration in Colby Lake	C_cl =	0.00937 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case Parameter	Closure Beryllium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0001 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0001 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0001 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0001 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0001 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0001 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0001 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0001 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0001 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0001 (mg/L)
	concentration of West Pit Overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0001 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0001 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0001 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0001 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0001 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0001 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0001 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0001 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.0003 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.0023 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0023 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0023 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.0023 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0023 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0023 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	- (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0001 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0001 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0001 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Low Flow			
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00074 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.00283 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.00106 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00042 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.00009 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.00125 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.00009 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.00567 (mg/s)
	mass flux of West Pit Overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.00003 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.00931 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.00193 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.00480 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00110 (mg/s)
Low Flow			
Mass balance at each node	mass flux in river at SW-001	M_r1 =	0.0038 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.0046 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.0051 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.0065 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.0122 (mg/s)
	mass flux in river at SW-005	M_r5 =	0.0215 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	0.0234 (mg/s)
	mass flux into Colby Lake	M_cl =	0.0293 (mg/s)
Low Flow			
Convert mass flux to concentration	concentration in river at SW-001	C_r1 =	0.00011 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00011 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00012 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00012 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00013 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00014 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00014 (mg/L)
	concentration in Colby Lake	C_cl =	0.00011 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case Parameter	Closure Calcium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	17.0000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	17.0000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	17.0000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	17.0000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	17.0000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	17.0000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	17.0000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	17.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	17.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	24.5000 (mg/L)
	concentration of West Pit Overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	14.7900 (mg/L)
	concentration of ground water into SW-002	C_g2 =	14.7900 (mg/L)
	concentration of ground water into SW-003	C_g3 =	14.7900 (mg/L)
	concentration of ground water into SW-004	C_g4 =	14.7900 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	14.7900 (mg/L)
	concentration of ground water into SW-005	C_g5 =	14.7900 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	14.7900 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	14.7900 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	161.8963 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	540.0000 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	480.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	480.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	480.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	15.8000 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	540.0000 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	480.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	480.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	480.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	9.3700 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	14.7900 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	14.7900 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	14.7900 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Low Flow			
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	75.34026 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	693.35000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	107.89920 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	42.58957 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	51.08557 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.20077 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.04200 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00025 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	127.16988 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	51.08557 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.04200 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00397 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00047 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00022 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	578.09279 (mg/s)
	mass flux of West Pit Overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	93.98106 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.01183 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	20.42604 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	950.12439 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	196.72179 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	489.71169 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	187.62900 (mg/s)
Low Flow			
Mass balance at each node	mass flux in river at SW-001	M_r1 =	768.6903 (mg/s)
	mass flux in river at SW-002	M_r2 =	876.5895 (mg/s)
	mass flux in river at SW-003	M_r3 =	970.5076 (mg/s)
	mass flux in river at SW-004	M_r4 =	1,148.8100 (mg/s)
	mass flux in river at SW-004A	M_r4A =	1,841.3217 (mg/s)
	mass flux in river at SW-005	M_r5 =	2,791.4461 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	2,988.1679 (mg/s)
	mass flux into Colby Lake	M_cl =	3,665.5086 (mg/s)
Low Flow			
Convert mass flux to concentration	concentration in river at SW-001	C_r1 =	23.01881 (mg/L)
	concentration in river at SW-002	C_r2 =	21.54343 (mg/L)
	concentration in river at SW-003	C_r3 =	22.11475 (mg/L)
	concentration in river at SW-004	C_r4 =	21.75814 (mg/L)
	concentration in river at SW-004A	C_r4A =	19.72436 (mg/L)
	concentration in river at SW-005	C_r5 =	17.71293 (mg/L)
	concentration in river at USGS Gage	C_r6 =	17.48544 (mg/L)
	concentration in Colby Lake	C_cl =	17.00636 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case Parameter	Closure Cadmium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0001 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0001 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0001 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0001 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0001 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0001 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0001 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0001 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0001 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0001 (mg/L)
	concentration of West Pit Overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0001 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0001 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0001 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0001 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0001 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0001 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0001 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0001 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.0007 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.0149 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0149 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0149 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.0149 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0149 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0149 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0001 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0001 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0001 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0001 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00051 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.00283 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.00073 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00029 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.00022 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.00086 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.00022 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.00391 (mg/s)
	mass flux of West Pit Overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.00003 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.00642 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.00133 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.00331 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00110 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	0.0033 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.0041 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.0046 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.0057 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.0096 (mg/s)
	mass flux in river at SW-005	M_r5 =	0.0160 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	0.0174 (mg/s)
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C_r1 =	0.00010 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00010 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00010 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00011 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00010 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00010 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00010 (mg/L)
	concentration in Colby Lake	C_cl =	0.00010 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case Parameter	Closure Chloride		
Input concentration data	concentration of surface water into SW-001	C_s1 =	8.0000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	8.0000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	8.0000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	8.0000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	8.0000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	8.0000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	8.0000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	8.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	8.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	1.6000 (mg/L)
	concentration of West Pit Overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	6.6000 (mg/L)
	concentration of ground water into SW-002	C_g2 =	6.6000 (mg/L)
	concentration of ground water into SW-003	C_g3 =	6.6000 (mg/L)
	concentration of ground water into SW-004	C_g4 =	6.6000 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	6.6000 (mg/L)
	concentration of ground water into SW-005	C_g5 =	6.6000 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	6.6000 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	6.6000 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	71.9621 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	- (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	- (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	- (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	- (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	2.3300 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	- (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	- (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	- (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	- (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	5.3500 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	6.6000 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	6.6000 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	6.6000 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Low Flow			
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	33.62040 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	45.28000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	48.14975 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	19.00549 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	22.70729 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	- (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	- (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	56.74924 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	22.70729 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	- (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	- (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	- (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	- (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	257.97244 (mg/s)
	mass flux of West Pit Overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	- (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	3.01219 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	423.99060 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	87.78660 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	218.53260 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	88.29600 (mg/s)
Low Flow			
Mass balance at each node	mass flux in river at SW-001	M_r1 =	78.9004 (mg/s)
	mass flux in river at SW-002	M_r2 =	127.0501 (mg/s)
	mass flux in river at SW-003	M_r3 =	168.7629 (mg/s)
	mass flux in river at SW-004	M_r4 =	248.2194 (mg/s)
	mass flux in river at SW-004A	M_r4A =	509.2041 (mg/s)
	mass flux in river at SW-005	M_r5 =	933.1947 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	1,020.9813 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	1,327.8099 (mg/s)
	concentration in river at SW-001	C_r1 =	2.36271 (mg/L)
	concentration in river at SW-002	C_r2 =	3.12244 (mg/L)
	concentration in river at SW-003	C_r3 =	3.84556 (mg/L)
	concentration in river at SW-004	C_r4 =	4.70121 (mg/L)
	concentration in river at SW-004A	C_r4A =	5.45463 (mg/L)
	concentration in river at SW-005	C_r5 =	5.92152 (mg/L)
	concentration in river at USGS Gage	C_r6 =	5.97433 (mg/L)
	concentration in Colby Lake	C_cl =	7.73721 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case Parameter	Closure Cobalt		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0005 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0005 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0005 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0005 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0005 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0005 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0005 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0005 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0005 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0005 (mg/L)
	concentration of West Pit Overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0017 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0017 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0017 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0017 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0017 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0017 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0017 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0017 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.0085 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0520 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	44.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	44.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	44.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0013 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0520 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	44.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	44.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	44.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0011 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0017 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0017 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0017 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00841 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.01415 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.01204 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00475 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.00269 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.01840 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00	0.00385 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003	0.00002 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.01419 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.00269 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00	0.00385 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00036 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0	0.00004 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00002 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.06449 (mg/s)
	mass flux of West Pit Overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.00905 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.00168 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.10600 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.02195 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.05463 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00552 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	0.0228 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.0346 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.0643 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.0855 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.1607 (mg/s)
	mass flux in river at SW-005	M_r5 =	0.2667 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	0.2886 (mg/s)
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C_r1 =	0.00068 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00085 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00147 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00162 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00172 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00169 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00169 (mg/L)
	concentration in Colby Lake	C_cl =	0.00066 (mg/L)

**Partridge River Mass-Balance Model - Mine Site - Proposed Action**

Case Parameter	Closure Copper		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0017 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0017 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0017 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0017 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0017 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0017 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0017 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0017 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0190 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0012 (mg/L)
	concentration of West Pit Overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0030 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0030 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0030 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0030 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0030 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0030 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0030 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0030 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.0956 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0920 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	202.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	202.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	202.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0170 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0920 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	202.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	202.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	202.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0214 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0030 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0030 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0030 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.01503 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.03509 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.02152 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00849 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.03016 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.08449 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.01767 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00011 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.02537 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.03016 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.01767 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00167 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00020 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00009 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.11531 (mg/s)
	mass flux of West Pit Overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.01601 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.02198 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.18951 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.03924 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.09768 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.20970 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	0.0501 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.0716 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.2126 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.2878 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.4411 (mg/s)
	mass flux in river at SW-005	M_r5 =	0.8306 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	0.6699 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	0.9773 (mg/s)
	Low Flow		
	concentration in river at SW-001	C_r1 =	0.00150 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00176 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00484 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00545 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00473 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00400 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00392 (mg/L)
	concentration in Colby Lake	C_cl =	0.00211 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case Parameter	Closure Fluoride		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0700 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0700 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0700 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0700 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0700 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0700 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0700 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0700 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0700 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.1400 (mg/L)
	concentration of West Pit Overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.2800 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.2800 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.2800 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.2800 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.2800 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.2800 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.2800 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.2800 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	6.4387 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0621 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.0622 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0622 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0622 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.4200 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0621 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.0622 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0622 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0622 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.2239 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.2800 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.2800 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.2800 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Low Flow			
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	1.42632 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	3.96200 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	2.04272 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.80629 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	2.03171 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00003 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	2.40754 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	2.03171 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	10.94429 (mg/s)
	mass flux of West Pit Overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.01081 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.54297 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	17.98748 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	3.72428 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	9.27108 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.77259 (mg/s)
Low Flow			
Mass balance at each node	mass flux in river at SW-001	M_r1 =	5.3883 (mg/s)
	mass flux in river at SW-002	M_r2 =	7.4310 (mg/s)
	mass flux in river at SW-003	M_r3 =	10.2691 (mg/s)
	mass flux in river at SW-004	M_r4 =	14.7083 (mg/s)
	mass flux in river at SW-004A	M_r4A =	26.2064 (mg/s)
	mass flux in river at SW-005	M_r5 =	44.1939 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	47.9182 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	57.9618 (mg/s)
	concentration in river at SW-001	C_r1 =	0.16136 (mg/L)
	concentration in river at SW-002	C_r2 =	0.18263 (mg/L)
	concentration in river at SW-003	C_r3 =	0.23400 (mg/L)
	concentration in river at SW-004	C_r4 =	0.27857 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.28072 (mg/L)
	concentration in river at SW-005	C_r5 =	0.28043 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.28040 (mg/L)
	concentration in Colby Lake	C_cl =	0.09869 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case Parameter	Closure Iron		
Input concentration data	concentration of surface water into SW-001	C_s1 =	1.6000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	1.6000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	1.6000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	1.6000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	1.6000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	1.6000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	1.6000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	1.6000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	1.6000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0300 (mg/L)
	concentration of West Pit Overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	2.8440 (mg/L)
	concentration of ground water into SW-002	C_g2 =	2.8440 (mg/L)
	concentration of ground water into SW-003	C_g3 =	2.8440 (mg/L)
	concentration of ground water into SW-004	C_g4 =	2.8440 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	2.8440 (mg/L)
	concentration of ground water into SW-005	C_g5 =	2.8440 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	2.8440 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	2.8440 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.8108 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.8100 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	235.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	235.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	235.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.1500 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.8100 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	235.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	235.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	235.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.2255 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	2.8440 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	2.8440 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	2.8440 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Low Flow			
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	14.48734 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.84900 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	20.74816 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	8.18964 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.25586 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.09829 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.02056 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00012 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	24.45376 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.25586 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.02056 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00194 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00023 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00011 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	111.16267 (mg/s)
	mass flux of West Pit Overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.14097 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00002 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.19392 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	182.70140 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	37.82804 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	94.16768 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	17.65920 (mg/s)
Low Flow			
Mass balance at each node	mass flux in river at SW-001	M_r1 =	15.3363 (mg/s)
	mass flux in river at SW-002	M_r2 =	36.0845 (mg/s)
	mass flux in river at SW-003	M_r3 =	44.6490 (mg/s)
	mass flux in river at SW-004	M_r4 =	69.3816 (mg/s)
	mass flux in river at SW-004A	M_r4A =	180.8791 (mg/s)
	mass flux in river at SW-005	M_r5 =	363.5805 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	401.4086 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	513.2355 (mg/s)
	concentration in river at SW-001	C_r1 =	0.45925 (mg/L)
	concentration in river at SW-002	C_r2 =	0.88683 (mg/L)
	concentration in river at SW-003	C_r3 =	1.01741 (mg/L)
	concentration in river at SW-004	C_r4 =	1.31407 (mg/L)
	concentration in river at SW-004A	C_r4A =	1.93759 (mg/L)
	concentration in river at SW-005	C_r5 =	2.30708 (mg/L)
	concentration in river at USGS Gage	C_r6 =	2.34887 (mg/L)
	concentration in Colby Lake	C_cl =	1.71271 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case Parameter	Closure Hardness		
Input concentration data	concentration of surface water into SW-001	C_s1 =	110.0000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	110.0000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	110.0000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	110.0000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	110.0000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	110.0000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	110.0000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	110.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	110.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	110.0000 (mg/L)
	concentration of West Pit Overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	66.4200 (mg/L)
	concentration of ground water into SW-002	C_g2 =	66.4200 (mg/L)
	concentration of ground water into SW-003	C_g3 =	66.4200 (mg/L)
	concentration of ground water into SW-004	C_g4 =	66.4200 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	66.4200 (mg/L)
	concentration of ground water into SW-005	C_g5 =	66.4200 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	66.4200 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	66.4200 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	528.8871 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	1,729.3495 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	5,435.6906 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	5,435.6906 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	5,435.6906 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	71.5000 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	1,729.3495 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	5,435.6906 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	5,435.6906 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	5,435.6906 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	43.5200 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	66.4200 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	66.4200 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	66.4200 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	338.34348 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	3,113.00000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	484.56154 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	191.26430 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	166.88769 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	2.27357 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.47561 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00286 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	571.10370 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	166.88769 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.47561 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.04490 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00534 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00248 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	2,596.14083 (mg/s)
	mass flux of West Pit Overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	300.97424 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.03789 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	92.43429 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	4,266.88722 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	883.45242 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	2,199.23262 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	1,214.07000 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	3,451.3435 (mg/s)
	mass flux in river at SW-002	M_r2 =	3,935.9050 (mg/s)
	mass flux in river at SW-003	M_r3 =	4,296.8090 (mg/s)
	mass flux in river at SW-004	M_r4 =	5,035.3316 (mg/s)
	mass flux in river at SW-004A	M_r4A =	8,024.9189 (mg/s)
	mass flux in river at SW-005	M_r5 =	12,291.8061 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	13,175.2585 (mg/s)
	mass flux into Colby Lake	M_cl =	16,588.5611 (mg/s)
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C_r1 =	103.35220 (mg/L)
	concentration in river at SW-002	C_r2 =	96.73044 (mg/L)
	concentration in river at SW-003	C_r3 =	97.91046 (mg/L)
	concentration in river at SW-004	C_r4 =	95.36776 (mg/L)
	concentration in river at SW-004A	C_r4A =	85.96345 (mg/L)
	concentration in river at SW-005	C_r5 =	77.99682 (mg/L)
	concentration in river at USGS Gage	C_r6 =	77.09578 (mg/L)
	concentration in Colby Lake	C_cl =	105.27829 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case Parameter	Closure Potassium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	1.3000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	1.3000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	1.3000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	1.3000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	1.3000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	1.3000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	1.3000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	1.3000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	1.3000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	2.7000 (mg/L)
	concentration of West Pit Overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	1.7500 (mg/L)
	concentration of ground water into SW-002	C_g2 =	1.7500 (mg/L)
	concentration of ground water into SW-003	C_g3 =	1.7500 (mg/L)
	concentration of ground water into SW-004	C_g4 =	1.7500 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	1.7500 (mg/L)
	concentration of ground water into SW-005	C_g5 =	1.7500 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	1.7500 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	1.7500 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	26.4202 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	49.0000 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	38.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	38.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	38.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	4.4500 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	49.0000 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	38.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	38.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	38.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	2.2600 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	1.7500 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	1.7500 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	1.7500 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Low Flow			
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	8.91450 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	76.41000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	12.76698 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	5.03933 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	8.33677 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.01589 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00	0.00332 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00002 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	15.04715 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	8.33677 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00	0.00332 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00031 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0	0.00004 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00002 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	68.40178 (mg/s)
	mass flux of West Pit Overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	8.52791 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00107 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	5.75290 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	112.42175 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	23.27675 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	57.94425 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	14.34810 (mg/s)
Low Flow			
Mass balance at each node	mass flux in river at SW-001	M_r1 =	85.3245 (mg/s)
	mass flux in river at SW-002	M_r2 =	98.0915 (mg/s)
	mass flux in river at SW-003	M_r3 =	111.4868 (mg/s)
	mass flux in river at SW-004	M_r4 =	134.8745 (mg/s)
	mass flux in river at SW-004A	M_r4A =	217.5581 (mg/s)
	mass flux in river at SW-005	M_r5 =	329.9799 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	353.2566 (mg/s)
	mass flux into Colby Lake	M_cl =	425.5490 (mg/s)
Low Flow			
Convert mass flux to concentration	concentration in river at SW-001	C_r1 =	2.55508 (mg/L)
	concentration in river at SW-002	C_r2 =	2.41074 (mg/L)
	concentration in river at SW-003	C_r3 =	2.54043 (mg/L)
	concentration in river at SW-004	C_r4 =	2.55448 (mg/L)
	concentration in river at SW-004A	C_r4A =	2.33050 (mg/L)
	concentration in river at SW-005	C_r5 =	2.09386 (mg/L)
	concentration in river at USGS Gage	C_r6 =	2.06710 (mg/L)
	concentration in Colby Lake	C_cl =	1.39789 (mg/L)

fts

Case	Closure		
Parameter	Magnesium		
Input concentration data	concentration of surface water into SW-001	C s1 =	8.0000 (mg/L)
	concentration of surface water into SW-002	C s2 =	8.0000 (mg/L)
	concentration of surface water into SW-003	C s3 =	8.0000 (mg/L)
	concentration of surface water into SW-004	C s4 =	8.0000 (mg/L)
	concentration of surface water into SW-004A	C s4A =	8.0000 (mg/L)
	concentration of surface water into SW-005	C s5 =	8.0000 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	8.0000 (mg/L)
	concentration of surface water into Colby Lake	C scl =	8.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	8.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	10.5000 (mg/L)
	concentration of West Pit Overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	8.0200 (mg/L)
	concentration of ground water into SW-002	C g2 =	8.0200 (mg/L)
	concentration of ground water into SW-003	C g3 =	8.0200 (mg/L)
	concentration of ground water into SW-004	C g4 =	8.0200 (mg/L)
	concentration of ground water into SW-004A	C g4A =	8.0200 (mg/L)
	concentration of ground water into SW-005	C g5 =	8.0200 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	8.0200 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	8.0200 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	30.3529 (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	93.0000 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	1,030.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	1,030.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	1,030.0000 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	9.0100 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	93.0000 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C gC3s =	1,030.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	1,030.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	1,030.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	4.8800 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	8.0200 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	8.0200 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	8.0200 (mg/L)
	concentration of liner leakage from WWTF pond	C gWTFp =	#N/A (mg/L)

Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M s1 =	(mg/s)
	mass flux of ground water into SW-001	M g1 =	40.85388 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	297.15000 (mg/s)
	mass flux of surface water into SW-002	M s2 =	(mg/s)
	mass flux of ground water into SW-002	M g2 =	58.50924 (mg/s)
	mass flux of surface water into SW-003	M s3 =	(mg/s)
	mass flux of ground water into SW-003	M g3 =	23.09455 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep 003 =	9.57770 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M gC3 003 =	0.43082 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO 00	0.09012 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M gC3s 003	0.00054 (mg/s)
	mass flux of surface water into SW-004	M s4 =	(mg/s)
	mass flux of ground water into SW-004	M g4 =	68.95892 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep 004 =	9.57770 (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M gC3 004 =	(mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO 00	0.09012 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00851 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs 0	0.00101 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00047 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	(mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	(mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	(mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	(mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M s4A =	(mg/s)
	mass flux of ground water into SW-004A	M g4A =	313.47560 (mg/s)
	mass flux of West Pit Overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M gC12 =	16.18563 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M gC12s =	0.00204 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M gO12 =	11.64801 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	(mg/s)
	mass flux of ground water into SW-005	M g5 =	515.21282 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	(mg/s)
	mass flux of ground water into USGS Gage	M g6 =	106.67402 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	(mg/s)
	mass flux of ground water into Colby Lake	M gcl =	265.55022 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl =	88.29600 (mg/s)

Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M r1 =	338.0039 (mg/s)
	mass flux in river at SW-002	M r2 =	396.5131 (mg/s)
	mass flux in river at SW-003	M r3 =	429.7068 (mg/s)
	mass flux in river at SW-004	M r4 =	508.3441 (mg/s)
	mass flux in river at SW-004A	M r4A =	849.6554 (mg/s)
	mass flux in river at SW-005	M r5 =	1,364.8682 (mg/s)
	mass flux in river at USGS Gage	M r6 =	1,471.5422 (mg/s)
	mass flux into Colby Lake	M cl =	1,825.3885 (mg/s)

Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C r1 =	10.12169 (mg/L)
	concentration in river at SW-002	C r2 =	9.74487 (mg/L)
	concentration in river at SW-003	C r3 =	9.79164 (mg/L)
	concentration in river at SW-004	C r4 =	9.62789 (mg/L)
	concentration in river at SW-004A	C r4A =	9.10156 (mg/L)
	concentration in river at SW-005	C r5 =	8.66068 (mg/L)
	concentration in river at USGS Gage	C r6 =	8.61081 (mg/L)
	concentration in Colby Lake	C cl =	8.07026 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case	Closure		
Parameter	Manganese		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.1500 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.1500 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.1500 (mg/L)
	concentration of surface water into SW-002	C s4 =	0.1500 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.1500 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.1500 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.1500 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.1500 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.1500 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0086 (mg/L)
	concentration of West Pit Overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.1240 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.1240 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.1240 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.1240 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.1240 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.1240 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.1240 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.1240 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	0.3280 (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	0.7500 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	47.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	47.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	47.0000 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	0.1160 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	0.7500 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C gC3s =	47.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	47.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	47.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.1604 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.1240 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.1240 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.1240 (mg/L)
	concentration of liner leakage from WWTF ponc	C gWTFp =	#N/A (mg/L)
		Low Flow	
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	(mg/s)
	mass flux of ground water into SW-001	M g1 =	0.63166 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.24338 (mg/s)
	mass flux of surface water into SW-002	M s2 =	(mg/s)
	mass flux of ground water into SW-002	M g2 =	0.90463 (mg/s)
	mass flux of surface water into SW-003	M s3 =	(mg/s)
	mass flux of ground water into SW-003	M g3 =	0.35707 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep 003 =	0.10348 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M gC3 003 =	0.01966 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO 00	0.00411 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M gC3s 003	0.00002 (mg/s)
	mass flux of surface water into SW-004	M s4 =	(mg/s)
	mass flux of ground water into SW-004	M g4 =	1.06620 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep 004 =	0.10348 (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M gC3 004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO 00	0.00411 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00039 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs 0	0.00005 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00002 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M g4A =	4.84675 (mg/s)
	mass flux of West Pit Overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M gC12 =	0.13053 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M gC12s =	0.00002 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M gO12 =	0.14996 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	- (mg/s)
	mass flux of ground water into SW-005	M g5 =	7.96588 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	1.64932 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	4.10576 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl =	1.65555 (mg/s)
		Low Flow	
Mass balance at each node	mass flux in river at SW-001	M r1 =	0.8750 (mg/s)
	mass flux in river at SW-002	M r2 =	1.7797 (mg/s)
	mass flux in river at SW-003	M r3 =	2.2640 (mg/s)
	mass flux in river at SW-004	M r4 =	3.4383 (mg/s)
	mass flux in river at SW-004A	M r4A =	8.5656 (mg/s)
	mass flux in river at SW-005	M r5 =	16.5314 (mg/s)
	mass flux in river at USGS Gage	M r6 =	18.1808 (mg/s)
mass flux into Colby Lake	M cl =	23.9421 (mg/s)	
Convert mass flux to concentration	concentration in river at SW-001	C r1 =	0.02620 (mg/L)
	concentration in river at SW-002	C r2 =	0.04374 (mg/L)
	concentration in river at SW-003	C r3 =	0.05159 (mg/L)
	concentration in river at SW-004	C r4 =	0.06512 (mg/L)
	concentration in river at SW-004A	C r4A =	0.09175 (mg/L)
	concentration in river at SW-005	C r5 =	0.10490 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.10639 (mg/L)
	concentration in Colby Lake	C cl =	0.14445 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case Parameter	Closure Sodium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	2.5000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	2.5000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	2.5000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	2.5000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	2.5000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	2.5000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	2.5000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	2.5000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	2.5000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	4.8000 (mg/L)
	concentration of West Pit Overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	13.3300 (mg/L)
	concentration of ground water into SW-002	C_g2 =	13.3300 (mg/L)
	concentration of ground water into SW-003	C_g3 =	13.3300 (mg/L)
	concentration of ground water into SW-004	C_g4 =	13.3300 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	13.3300 (mg/L)
	concentration of ground water into SW-005	C_g5 =	13.3300 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	13.3300 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	13.3300 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	562.7993 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	681.0000 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	338.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	338.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	338.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	7.1900 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	681.0000 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	338.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	338.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	338.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	4.6000 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	13.3300 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	13.3300 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	13.3300 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Low Flow			
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	67.90302 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	135.84000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	97.24790 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	38.38532 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	177.58850 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.14137 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.02957 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00018 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	114.61626 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	177.58850 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.02957 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00279 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00033 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00015 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	521.02615 (mg/s)
	mass flux of West Pit Overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	118.52056 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.01492 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	9.29514 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	856.33253 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	177.30233 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	441.36963 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	27.59250 (mg/s)
Low Flow			
Mass balance at each node	mass flux in river at SW-001	M_r1 =	203.7430 (mg/s)
	mass flux in river at SW-002	M_r2 =	300.9909 (mg/s)
	mass flux in river at SW-003	M_r3 =	617.1359 (mg/s)
	mass flux in river at SW-004	M_r4 =	809.3737 (mg/s)
	mass flux in river at SW-004A	M_r4A =	1,458.2304 (mg/s)
	mass flux in river at SW-005	M_r5 =	2,314.5630 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	2,491.8653 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	2,960.8274 (mg/s)
	concentration in river at SW-001	C_r1 =	6.10119 (mg/L)
	concentration in river at SW-002	C_r2 =	7.39728 (mg/L)
	concentration in river at SW-003	C_r3 =	11.78386 (mg/L)
	concentration in river at SW-004	C_r4 =	15.32931 (mg/L)
	concentration in river at SW-004A	C_r4A =	15.62066 (mg/L)
	concentration in river at SW-005	C_r5 =	14.68690 (mg/L)
	concentration in river at USGS Gage	C_r6 =	14.58129 (mg/L)
	concentration in Colby Lake	C_cl =	4.11804 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case Parameter	Closure Nickel		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0016 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0016 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0016 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0016 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0016 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0016 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0016 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0016 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0033 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0016 (mg/L)
	concentration of West Pit Overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0163 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0163 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0163 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0163 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0163 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0163 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0163 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0163 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.0845 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.3824 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	762.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	762.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	762.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0190 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.3824 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	762.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	762.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	762.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0080 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0163 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0163 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0163 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Low Flow			
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.08293 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.04387 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.11877 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.04688 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.02665 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.31872 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.06667 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00040 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.13998 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.02665 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.06667 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00629 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00075 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00035 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.63633 (mg/s)
	mass flux of West Pit Overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.06655 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.02456 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	1.04584 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.21654 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.53905 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.03642 (mg/s)
Low Flow			
Mass balance at each node	mass flux in river at SW-001	M_r1 =	0.1268 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.2456 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.7049 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.9460 (mg/s)
	mass flux in river at SW-004A	M_r4A =	1.6734 (mg/s)
	mass flux in river at SW-005	M_r5 =	2.7193 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	2.9358 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	3.5113 (mg/s)
	concentration in river at SW-001	C_r1 =	0.00380 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00604 (mg/L)
	concentration in river at SW-003	C_r3 =	0.01606 (mg/L)
	concentration in river at SW-004	C_r4 =	0.01792 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.01793 (mg/L)
	concentration in river at SW-005	C_r5 =	0.01726 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.01718 (mg/L)
	concentration in Colby Lake	C_cl =	0.00368 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case Parameter	Closure Lead		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0005 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0005 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0005 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0005 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0005 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0005 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0005 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0005 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0005 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0002 (mg/L)
	concentration of West Pit Overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0011 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0011 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0011 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0011 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0011 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0011 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0011 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0011 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.0094 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0457 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.0528 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0528 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0528 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0457 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.0528 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0528 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0528 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0007 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0011 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0011 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0011 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Low Flow			
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00571 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.00425 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.00817 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00323 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.00296 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00002 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.00963 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.00296 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.04378 (mg/s)
	mass flux of West Pit Overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.00795 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.07195 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.01490 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.03708 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00552 (mg/s)
Low Flow			
Mass balance at each node	mass flux in river at SW-001	M_r1 =	0.0100 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.0181 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.0243 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.0369 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.0887 (mg/s)
	mass flux in river at SW-005	M_r5 =	0.1606 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	0.1755 (mg/s)
	mass flux into Colby Lake	M_cl =	0.2181 (mg/s)
Low Flow			
Convert mass flux to concentration	concentration in river at SW-001	C_r1 =	0.00030 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00045 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00055 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00070 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00095 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00102 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00103 (mg/L)
	concentration in Colby Lake	C_cl =	0.00057 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case Parameter	Closure Antimony		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0015 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0015 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0015 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0015 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0015 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0015 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0015 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0015 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0015 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0015 (mg/L)
	concentration of West Pit Overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0015 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0015 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0015 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0015 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0015 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0015 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0015 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0015 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	0.0811 (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	0.0800 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	0.0800 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0800 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0800 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	0.0004 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	0.0800 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C gC3s =	0.0800 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.0800 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0800 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0003 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0015 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0015 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0015 (mg/L)
	concentration of liner leakage from WWTF pond	C gWTFp =	#N/A (mg/L)
Low Flow			
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	(mg/s)
	mass flux of ground water into SW-001	M g1 =	0.00764 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.04245 (mg/s)
	mass flux of surface water into SW-002	M s2 =	(mg/s)
	mass flux of ground water into SW-002	M g2 =	0.01094 (mg/s)
	mass flux of surface water into SW-003	M s3 =	(mg/s)
	mass flux of ground water into SW-003	M g3 =	0.00432 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	0.02560 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M gC3_003 =	0.00003 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_00 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	(mg/s)
	mass flux of ground water into SW-004	M g4 =	0.01290 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	0.02560 (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M gC3_004 =	(mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_00 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_0 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	(mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	(mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	(mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	(mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M s4A =	(mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.05863 (mg/s)
	mass flux of West Pit Overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M gC12 =	0.01392 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M gO12 =	0.00052 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	(mg/s)
	mass flux of ground water into SW-005	M g5 =	0.09636 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	(mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.01995 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	(mg/s)
	mass flux of ground water into Colby Lake	M gcl =	0.04967 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.01656 (mg/s)
Low Flow			
Mass balance at each node	mass flux in river at SW-001	M r1 =	0.0501 (mg/s)
	mass flux in river at SW-002	M r2 =	0.0610 (mg/s)
	mass flux in river at SW-003	M r3 =	0.0910 (mg/s)
	mass flux in river at SW-004	M r4 =	0.1295 (mg/s)
	mass flux in river at SW-004A	M r4A =	0.2026 (mg/s)
	mass flux in river at SW-005	M r5 =	0.2969 (mg/s)
	mass flux in river at USGS Gage	M r6 =	0.3189 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M cl =	0.3851 (mg/s)
Low Flow			
Convert mass flux to concentration	concentration in river at SW-001	C r1 =	0.00150 (mg/L)
	concentration in river at SW-002	C r2 =	0.00150 (mg/L)
	concentration in river at SW-003	C r3 =	0.00207 (mg/L)
	concentration in river at SW-004	C r4 =	0.00245 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00217 (mg/L)
	concentration in river at SW-005	C r5 =	0.00190 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00187 (mg/L)
	concentration in Colby Lake	C cl =	0.00154 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case Parameter	Closure Selenium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0005 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0005 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0005 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0005 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0005 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0005 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0005 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0005 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0005 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0005 (mg/L)
	concentration of West Pit Overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0019 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0019 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0019 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0019 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0019 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0019 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0019 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0019 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.0219 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0029 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.0029 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0029 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0029 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0019 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0029 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.0029 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0029 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0029 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0004 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0019 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0019 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0019 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Low Flow			
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00973 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.01415 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.01393 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00550 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.00692 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.01642 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.00692 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.07466 (mg/s)
	mass flux of West Pit Overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.00050 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.00246 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.12270 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.02540 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.06324 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00552 (mg/s)
Low Flow			
Mass balance at each node	mass flux in river at SW-001	M_r1 =	0.0239 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.0378 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.0502 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.0736 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.1512 (mg/s)
	mass flux in river at SW-005	M_r5 =	0.2739 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	0.2993 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	0.3681 (mg/s)
	concentration in river at SW-001	C_r1 =	0.00072 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00093 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00114 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00139 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00162 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00174 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00175 (mg/L)
	concentration in Colby Lake	C_cl =	0.00067 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case Parameter	Closure sulfate		
Input concentration data	concentration of surface water into SW-001	C_s1 =	9.0000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	9.0000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	9.0000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	9.0000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	9.0000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	9.0000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	9.0000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	9.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	9.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	22.0000 (mg/L)
	concentration of West Pit Overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	16.1300 (mg/L)
	concentration of ground water into SW-002	C_g2 =	16.1300 (mg/L)
	concentration of ground water into SW-003	C_g3 =	16.1300 (mg/L)
	concentration of ground water into SW-004	C_g4 =	16.1300 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	16.1300 (mg/L)
	concentration of ground water into SW-005	C_g5 =	16.1300 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	16.1300 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	16.1300 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	321.8269 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	2,128.7143 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	9,600.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	9,600.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	9,600.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	68.3000 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	2,128.7143 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	9,600.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	9,600.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	9,600.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	35.1700 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	16.1300 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	16.1300 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	16.1300 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Low Flow			
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	82.16622 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	622.60000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	117.67506 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	46.44826 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	101.55087 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	4.01536 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.83997 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00505 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	138.69170 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	101.55087 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.83997 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.07930 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00942 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00438 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	630.46901 (mg/s)
	mass flux of West Pit Overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	370.47930 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.04665 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	88.29738 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	1,036.20733 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	214.54513 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	534.08043 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	99.33300 (mg/s)
Low Flow			
Mass balance at each node	mass flux in river at SW-001	M_r1 =	704.7662 (mg/s)
	mass flux in river at SW-002	M_r2 =	822.4413 (mg/s)
	mass flux in river at SW-003	M_r3 =	975.3008 (mg/s)
	mass flux in river at SW-004	M_r4 =	1,216.4915 (mg/s)
	mass flux in river at SW-004A	M_r4A =	2,305.7738 (mg/s)
	mass flux in river at SW-005	M_r5 =	3,341.9811 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	3,556.5263 (mg/s)
	mass flux into Colby Lake	M_cl =	4,189.9397 (mg/s)
Low Flow			
Convert mass flux to concentration	concentration in river at SW-001	C_r1 =	21.10458 (mg/L)
	concentration in river at SW-002	C_r2 =	20.21266 (mg/L)
	concentration in river at SW-003	C_r3 =	22.22397 (mg/L)
	concentration in river at SW-004	C_r4 =	23.03982 (mg/L)
	concentration in river at SW-004A	C_r4A =	24.69960 (mg/L)
	concentration in river at SW-005	C_r5 =	21.20631 (mg/L)
	concentration in river at USGS Gage	C_r6 =	20.81122 (mg/L)
	concentration in Colby Lake	C_cl =	10.51317 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case Parameter	Closure	Thallium	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0004 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0004 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0004 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0004 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0004 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0004 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0004 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0004 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0004 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0003 (mg/L)
	concentration of West Pit Overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0000 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0000 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0000 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0000 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0000 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0000 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0000 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0000 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.0007 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0000 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.0001 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0001 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0001 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0000 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.0001 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0001 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0001 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0000 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0000 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0000 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0000 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00002 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.00809 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.00003 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00001 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.00021 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.00003 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.00021 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.00016 (mg/s)
	mass flux of West Pit Overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.00026 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.00005 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.00013 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00441 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	0.0081 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.0081 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.0084 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.0086 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.0088 (mg/s)
	mass flux in river at SW-005	M_r5 =	0.0090 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	0.0091 (mg/s)
	mass flux into Colby Lake	M_cl =	0.0136 (mg/s)
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C_r1 =	0.00024 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00020 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00019 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00016 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00009 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00006 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00005 (mg/L)
	concentration in Colby Lake	C_cl =	0.00035 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case Parameter	Closure Vanadium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0009 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0009 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0009 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0009 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0009 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0009 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0009 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0009 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0009 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0043 (mg/L)
	concentration of West Pit Overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0043 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0043 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0043 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0043 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0043 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0043 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0043 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0043 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.1004 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	1.4099 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	22.2556 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	27.7840 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	6.2684 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0014 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	1.4099 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	22.2556 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	27.7840 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	6.2684 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0017 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0043 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0043 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0043 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.02190 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.12169 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.03137 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.01238 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.03169 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00931 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00243 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00001 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.03697 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.03169 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00243 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00005 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00003 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.16807 (mg/s)
	mass flux of West Pit Overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.24538 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00003 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.00181 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.27624 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.05719 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.14238 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00993 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	0.1438 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.1760 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.2308 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.3020 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.7173 (mg/s)
	mass flux in river at SW-005	M_r5 =	0.9935 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	1.0507 (mg/s)
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C_r1 =	0.00430 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00430 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00526 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00572 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00768 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00630 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00615 (mg/L)
	concentration in Colby Lake	C_cl =	0.00157 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case Parameter	Closure Zinc		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0160 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0160 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0160 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0160 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0160 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0160 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0160 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0160 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0620 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0073 (mg/L)
	concentration of West Pit Overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0275 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0275 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0275 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0275 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0275 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0275 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0275 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0275 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.1659 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0900 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	26.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	26.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	26.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0030 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0900 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	26.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	26.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	26.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0046 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0275 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0275 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0275 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Low Flow			
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.14009 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.20744 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.20062 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.07919 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.05235 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.01087 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00227 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00001 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.23646 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.05235 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00227 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00021 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00003 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00001 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	1.07489 (mg/s)
	mass flux of West Pit Overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.01566 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.00388 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	1.76663 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.36578 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.91055 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.68429 (mg/s)
Low Flow			
Mass balance at each node	mass flux in river at SW-001	M_r1 =	0.3475 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.5481 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.6928 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.9842 (mg/s)
	mass flux in river at SW-004A	M_r4A =	2.0796 (mg/s)
	mass flux in river at SW-005	M_r5 =	3.8453 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	4.2110 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	5.8059 (mg/s)
	concentration in river at SW-001	C_r1 =	0.01041 (mg/L)
	concentration in river at SW-002	C_r2 =	0.01347 (mg/L)
	concentration in river at SW-003	C_r3 =	0.01579 (mg/L)
	concentration in river at SW-004	C_r4 =	0.01864 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.02227 (mg/L)
	concentration in river at SW-005	C_r5 =	0.02440 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.02464 (mg/L)
	concentration in Colby Lake	C_cl =	0.01758 (mg/L)

# **Partridge River Mass-Balance Model--Mine Site-Proposed Action For Average Liner Leakage & Average Chemistry from Stockpiles**

## **FLOWS**

Case Flow	Closure Average Flow Conditions (mean annual)			
Total flow in Partridge River	flow in river at SW-001	Q_r1_M =	5.70	(cfs)
	flow in river at SW-002	Q_r2_M =	11.10	(cfs)
	flow in river at SW-003	Q_r3_M =	12.74	(cfs)
	flow in river at SW-004	Q_r4_M =	19.12	(cfs)
	flow in river at SW-004A	Q_r4a_M =	43.38	(cfs)
	flow in river at SW-005	Q_r5_M =	81.78	(cfs)
	flow in river at USGS Gage	Q_r6_M =	86.13	(cfs)
	total flow into Colby Lake	Q_cl_M =	111.25	(cfs)
	flow check	Q_ck_M =	111.25	(cfs)
input flow data	surface water flow into SW-001	Q_s1_M =	4.52	(cfs)
	surface water flow into SW-002	Q_s2_M =	5.14	(cfs)
	surface water flow into SW-003	Q_s3_M =	1.53	(cfs)
	surface water flow into SW-004	Q_s4_M =	6.06	(cfs)
	surface water flow into SW-004A	Q_s4a_M =	22.81	(cfs)
	surface water flow into SW-005	Q_s5_M =	36.13	(cfs)
	surface water flow into USGS Gage	Q_s6_M =	3.88	(cfs)
	surface water flow into Colby Lake	Q_scl_M =	23.56	(cfs)
	surface water inflow from Hoyt Lakes WWTP	Q_shl_M =	0.39	(cfs)
	surface water inflow from discharges upstream of PM-1	Q_sns_M =	1.00	(cfs)
	surface water flow from West Pit overflow	Q_sms_M =	-	(cfs)
	ground water flow into SW-001	Q_g1_M =	0.18	(cfs)
	ground water flow into SW-002	Q_g2_M =	0.26	(cfs)
	ground water flow into SW-003	Q_g3_M =	0.10	(cfs)
	ground water flow into SW-004	Q_g4_M =	0.30	(cfs)
	ground water flow into SW-004A	Q_g4a_M =	1.38	(cfs)
	ground water flow into SW-005	Q_g5_M =	2.27	(cfs)
	ground water flow into USGS Gage	Q_g6_M =	0.47	(cfs)
	ground water flow into Colby Lake	Q_gcl_M =	1.17	(cfs)
	ground water seepage from East Pit to SW-003	Q_gep_003_M =	0.0112	(cfs)
	ground water seepage from East Pit to SW-004	Q_gep_004_M =	0.0112	(cfs)
	ground water seepage from West Pit	Q_gwp_M =	-	(cfs)
	ground water liner leakage from Cat 1/2 stockpile	Q_gC12_M =	0.0084	(cfs)
	ground water liner leakage from Cat 3 stockpile to SW-003	Q_gC3_003_M =	0.0000	(cfs)
	ground water liner leakage from Cat 3 stockpile to SW-004	Q_gC3_004_M =	-	(cfs)
	ground water liner leakage from Cat 3LO stockpile to SW-003	Q_gC3LO_003_M =	0.0000	(cfs)
	ground water liner leakage from Cat 3LO stockpile to SW-004	Q_gC3LO_004_M =	0.0000	(cfs)
	ground water liner leakage from Cat 4 stockpile	Q_gC4_M =	0.0000	(cfs)
	ground water liner leakage from LO SP	Q_gC4LO_M =	-	(cfs)
	ground water seepage from Overburden Storage	Q_gOS_M =	-	(cfs)
	ground water seepage from Overburden (Cat 1/2)	Q_gO12_M =	0.0628	(cfs)
	ground water liner leakage from Cat 1/2 sumps	Q_gC12s_M =	0.0000	(cfs)
	ground water liner leakage from Cat 3 sumps	Q_gC3s_M =	0.0000	(cfs)
	ground water liner leakage from Cat 3LO sumps	Q_gC3LOs_M =	0.0000	(cfs)
	ground water liner leakage from Cat 4 sumps	Q_gC4s_M =	0.0000	(cfs)
	ground water liner leakage from LO SP sumps	Q_gC4LOs_M =	-	(cfs)
	ground water seepage from Overburden pond - PW1	Q_gOp1_M =	-	(cfs)
	ground water seepage from Overburden pond - PW7	Q_gOp7_M =	-	(cfs)
	ground water leakage from Haul Road pond - PW2	Q_gHRp2_M =	-	(cfs)
	ground water leakage from Haul Road pond - PW4	Q_gHRp4_M =	-	(cfs)
	ground water leakage from RTH pond - PW3	Q_gRTHp_M =	-	(cfs)
	ground water liner leakage from WWTF pond	Q_gWTFp_M =	-	(cfs)

Partridge River Mass-Balance Model--Mine Site-Proposed Action

Case	Closure		
Parameter	Silver		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0001 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0001 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0001 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0001 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0001 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0001 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0001 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0001 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0001 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0001 (mg/L)
	concentration of West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0006 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0006 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0006 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0006 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0006 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0006 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0006 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0006 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	0.0012 (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	0.0007 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	0.0007 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0007 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0007 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	0.0007 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C gC3s =	0.0007 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.0007 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0007 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	- (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0006 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0006 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0006 (mg/L)
	concentration of liner leakage from WWTF pond	C gWTFp =	#N/A (mg/L)
	Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =
mass flux of ground water into SW-001		M g1 =	0.00280 (mg/s)
mass flux of surface discharges from upstream of PM-1		M sns =	0.00340 (mg/s)
mass flux of surface water into SW-002		M s2 =	0.01454 (mg/s)
mass flux of ground water into SW-002		M g2 =	0.00401 (mg/s)
mass flux of surface water into SW-003		M s3 =	0.00434 (mg/s)
mass flux of ground water into SW-003		M g3 =	0.00158 (mg/s)
mass flux of seepage from East Pit to SW-003		M gep 003 =	0.00037 (mg/s)
mass flux of liner leakage from Cat 3 stockpile to SW-003		M gC3 003 =	0.00000 (mg/s)
mass flux of liner leakage from Cat 3LO stockpile to SW-003		M gC3LO 003 =	0.00000 (mg/s)
mass flux of liner leakage from Cat 3 sumps to SW-003		M gC3s 003 =	0.00000 (mg/s)
mass flux of surface water into SW-004		M s4 =	0.01715 (mg/s)
mass flux of ground water into SW-004		M g4 =	0.00473 (mg/s)
mass flux of seepage from East Pit to SW-004		M gep 004 =	0.00037 (mg/s)
mass flux of seepage from West Pit		M gwp =	#N/A (mg/s)
mass flux of liner leakage from Cat 3 stockpile to SW-004		M gC3 004 =	- (mg/s)
mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO 004 =	0.00000 (mg/s)	
mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00000 (mg/s)	
mass flux of liner leakage from LOSP	M gC4LO =	#N/A (mg/s)	
mass flux of seepage from Overburden (Storage)	M gOS =	#N/A (mg/s)	
mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs 004 =	0.00000 (mg/s)	
mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)	
mass flux of liner leakage from LOSP sumps	M gC4LOs =	#N/A (mg/s)	
mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	- (mg/s)	
mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	- (mg/s)	
mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	- (mg/s)	
mass flux of leakage from RTH Pond - PW3	M gRTHp =	- (mg/s)	
mass flux of liner leakage from WWTF pond	M gWTFp =	#N/A (mg/s)	
mass flux of surface water into SW-004A	M s4A =	0.06455 (mg/s)	
mass flux of ground water into SW-004A	M g4A =	0.02150 (mg/s)	
mass flux of West Pit overflow	M sms =	#N/A (mg/s)	
mass flux of liner leakage from Cat 1/2 stockpile	M gC12 =	0.00017 (mg/s)	
mass flux of liner leakage from Cat 1/2 sumps	M gC12s =	0.00000 (mg/s)	
mass flux of seepage from Overburden (Cat 1/2)	M gO12 =	- (mg/s)	
mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)	
mass flux of surface water into SW-005	M s5 =	0.10225 (mg/s)	
mass flux of ground water into SW-005	M g5 =	0.03533 (mg/s)	
mass flux of surface water into USGS Gage	M s6 =	0.01098 (mg/s)	
mass flux of ground water into USGS Gage	M g6 =	0.00732 (mg/s)	
mass flux of surface water into Colby Lake	M scl =	0.06667 (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	0.01821 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.00110 (mg/s)	
Mass balance at each node	Average Flow		
	mass flux in river at SW-001	M r1 =	0.0190 (mg/s)
	mass flux in river at SW-002	M r2 =	0.0375 (mg/s)
	mass flux in river at SW-003	M r3 =	0.0438 (mg/s)
	mass flux in river at SW-004	M r4 =	0.0661 (mg/s)
	mass flux in river at SW-004A	M r4A =	0.1523 (mg/s)
	mass flux in river at SW-005	M r5 =	0.2899 (mg/s)
	mass flux in river at USGS Gage	M r6 =	0.3062 (mg/s)
	mass flux into Colby Lake	M cl =	0.3942 (mg/s)
	Convert mass flux to concentration	Average Flow	
concentration in river at SW-001		C r1 =	0.00012 (mg/L)
concentration in river at SW-002		C r2 =	0.00012 (mg/L)
concentration in river at SW-003		C r3 =	0.00012 (mg/L)
concentration in river at SW-004		C r4 =	0.00012 (mg/L)
concentration in river at SW-004A		C r4A =	0.00012 (mg/L)
concentration in river at SW-005		C r5 =	0.00013 (mg/L)
concentration in river at USGS Gage		C r6 =	0.00013 (mg/L)
concentration in Colby Lake		C cl =	0.00013 (mg/L)

Partridge River Mass-Balance Model--Mine Site-Proposed Action

Case Parameter	Closure Aluminum		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0700 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0700 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0700 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0700 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0700 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0700 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0700 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0700 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0700 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0173 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.1250 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.1250 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.1250 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.1250 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.1250 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.1250 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.1250 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.1250 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	1.6294 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	1.6800 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	83.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	83.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	83.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.1400 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	1.6800 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	83.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	83.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	83.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.4106 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.1250 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.1250 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.1250 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Average Flow			
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	8.95493 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.63675 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.48959 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	10.17866 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.91193 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	3.03704 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.35995 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.51415 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.06887 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.01430 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00004 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	12.00424 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	1.07480 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.51415 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.01430 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00069 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00008 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00004 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	45.18717 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	4.88584 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.40169 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00004 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.24865 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	71.57718 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	8.03013 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	7.68642 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	1.66263 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	46.67236 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	4.13888 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.77259 (mg/s)
Average Flow			
Mass balance at each node	mass flux in river at SW-001	M_r1 =	10.0813 (mg/s)
	mass flux in river at SW-002	M_r2 =	21.1719 (mg/s)
	mass flux in river at SW-003	M_r3 =	25.1662 (mg/s)
	mass flux in river at SW-004	M_r4 =	38.7745 (mg/s)
	mass flux in river at SW-004A	M_r4A =	89.4979 (mg/s)
	mass flux in river at SW-005	M_r5 =	169.1052 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	178.4543 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	230.0381 (mg/s)
	concentration in river at SW-001	C_r1 =	0.06249 (mg/L)
	concentration in river at SW-002	C_r2 =	0.06742 (mg/L)
	concentration in river at SW-003	C_r3 =	0.06979 (mg/L)
	concentration in river at SW-004	C_r4 =	0.07167 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.07290 (mg/L)
	concentration in river at SW-005	C_r5 =	0.07307 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.07321 (mg/L)
	concentration in Colby Lake	C_cl =	0.07306 (mg/L)

Partridge River Mass-Balance Model--Mine Site-Proposed Action

Case Parameter	Closure Arsenic		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0021 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0021 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0021 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0021 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0021 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0021 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0021 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0021 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0021 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0065 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0022 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0022 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0022 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0022 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0022 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0022 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0022 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0022 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.0879 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.7100 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.7100 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.7100 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.7100 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0027 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.7100 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.7100 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.7100 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.7100 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0016 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0022 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0022 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0022 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Average Flow			
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	0.26993 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.01100 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.18395 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	0.30681 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.01576 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.09155 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00622 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.02774 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00059 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00012 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.36184 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.01857 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.02774 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00012 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00001 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	1.36207 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.08443 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.16976 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00002 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.00480 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	2.15754 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.13876 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.23169 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.02873 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	1.40684 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.07152 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.02329 (mg/s)
Average Flow			
Mass balance at each node	mass flux in river at SW-001	M_r1 =	0.4649 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.7875 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.9137 (mg/s)
	mass flux in river at SW-004	M_r4 =	1.3219 (mg/s)
	mass flux in river at SW-004A	M_r4A =	2.9430 (mg/s)
	mass flux in river at SW-005	M_r5 =	5.2393 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	5.4997 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	7.0014 (mg/s)
	concentration in river at SW-001	C_r1 =	0.00288 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00251 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00253 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00244 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00240 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00226 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00226 (mg/L)
	concentration in Colby Lake	C_cl =	0.00222 (mg/L)

Partridge River Mass-Balance Model--Mine Site-Proposed Action

Case Parameter	Closure Boron		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0450 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0450 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0450 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0450 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0450 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0450 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0450 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0450 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0450 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0960 (mg/L)
	concentration of West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0870 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0870 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0870 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0870 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0870 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0870 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0870 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0870 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	0.3471 (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	0.7600 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	0.7600 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.7600 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.7600 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	0.0370 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	0.7600 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C gC3s =	0.7600 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.7600 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.7600 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0622 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0870 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0870 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0870 (mg/L)
	concentration of liner leakage from WWTF ponc	C gWTFp =	#N/A (mg/L)
Average Flow			
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	5.75674 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.44318 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	2.71680 (mg/s)
	mass flux of surface water into SW-002	M s2 =	6.54343 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.63470 (mg/s)
	mass flux of surface water into SW-003	M s3 =	1.95238 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.25053 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	0.10953 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M gC3_003 =	0.00063 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00013 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	7.71701 (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.74806 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	0.10953 (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00013 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00001 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M s4A =	29.04890 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	3.40055 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M gC12 =	0.18172 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M gC12s =	0.00002 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M gO12 =	0.06572 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	46.01390 (mg/s)
	mass flux of ground water into SW-005	M g5 =	5.58897 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	4.94127 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	1.15719 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	30.00366 (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	2.88066 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.49667 (mg/s)
Average Flow			
Mass balance at each node	mass flux in river at SW-001	M r1 =	8.9167 (mg/s)
	mass flux in river at SW-002	M r2 =	16.0948 (mg/s)
	mass flux in river at SW-003	M r3 =	18.4081 (mg/s)
	mass flux in river at SW-004	M r4 =	26.5828 (mg/s)
	mass flux in river at SW-004A	M r4A =	59.6797 (mg/s)
	mass flux in river at SW-005	M r5 =	111.2825 (mg/s)
	mass flux in river at USGS Gage	M r6 =	117.3810 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M cl =	150.7620 (mg/s)
	concentration in river at SW-001	C r1 =	0.05527 (mg/L)
	concentration in river at SW-002	C r2 =	0.05125 (mg/L)
	concentration in river at SW-003	C r3 =	0.05105 (mg/L)
	concentration in river at SW-004	C r4 =	0.04987 (mg/L)
	concentration in river at SW-004A	C r4A =	0.04861 (mg/L)
	concentration in river at SW-005	C r5 =	0.04808 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.04816 (mg/L)
	concentration in Colby Lake	C cl =	0.04788 (mg/L)



Partridge River Mass-Balance Model--Mine Site-Proposed Action

Case Parameter	Closure Barium		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0077 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0077 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0077 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0077 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0077 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0077 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0077 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0077 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0077 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0050 (mg/L)
	concentration of West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0219 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0219 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0219 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0219 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0219 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0219 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0219 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0219 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	0.1477 (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	0.1900 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	0.1900 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.1900 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.1900 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	0.0140 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	0.1900 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C gC3s =	0.1900 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.1900 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.1900 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0168 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0219 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0219 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0219 (mg/L)
	concentration of liner leakage from WWTF pond	C gWTFp =	#N/A (mg/L)

		Average Flow
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 = 0.98248 (mg/s)
	mass flux of ground water into SW-001	M g1 = 0.11166 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns = 0.14150 (mg/s)
	mass flux of surface water into SW-002	M s2 = 1.11674 (mg/s)
	mass flux of ground water into SW-002	M g2 = 0.15992 (mg/s)
	mass flux of surface water into SW-003	M s3 = 0.33321 (mg/s)
	mass flux of ground water into SW-003	M g3 = 0.06312 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep 003 = 0.04661 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M gC3 003 = 0.00016 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO 003 = 0.00003 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M gC3s 003 = 0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 = 1.31704 (mg/s)
	mass flux of ground water into SW-004	M g4 = 0.18848 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep 004 = 0.04661 (mg/s)
	mass flux of seepage from West Pit	M gwp = #N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M gC3 004 = - (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO 004 = 0.00003 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 = 0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO = #N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS = #N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs 004 = 0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s = 0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs = #N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 = - (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 = - (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 = - (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp = - (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp = #N/A (mg/s)
	mass flux of surface water into SW-004A	M s4A = 4.95768 (mg/s)
	mass flux of ground water into SW-004A	M g4A = 0.85678 (mg/s)
	mass flux of West Pit overflow	M sms = #N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M gC12 = 0.04543 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M gC12s = 0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M gO12 = 0.02487 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 = #N/A (mg/s)
	mass flux of surface water into SW-005	M s5 = 7.85304 (mg/s)
	mass flux of ground water into SW-005	M g5 = 1.40816 (mg/s)
	mass flux of surface water into USGS Gage	M s6 = 0.84331 (mg/s)
	mass flux of ground water into USGS Gage	M g6 = 0.29156 (mg/s)
	mass flux of surface water into Colby Lake	M scl = 5.12062 (mg/s)
	mass flux of ground water into Colby Lake	M gcl = 0.72579 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl = 0.08476 (mg/s)
		Average Flow
Mass balance at each node	mass flux in river at SW-001	M r1 = 1.2358 (mg/s)
	mass flux in river at SW-002	M r2 = 2.5123 (mg/s)
	mass flux in river at SW-003	M r3 = 2.9564 (mg/s)
	mass flux in river at SW-004	M r4 = 4.5076 (mg/s)
	mass flux in river at SW-004A	M r4A = 10.3923 (mg/s)
	mass flux in river at SW-005	M r5 = 19.6535 (mg/s)
	mass flux in river at USGS Gage	M r6 = 20.7884 (mg/s)
mass flux into Colby Lake	M cl = 26.7196 (mg/s)	
		Average Flow
Convert mass flux to concentration	concentration in river at SW-001	C r1 = 0.00766 (mg/L)
	concentration in river at SW-002	C r2 = 0.00800 (mg/L)
	concentration in river at SW-003	C r3 = 0.00820 (mg/L)
	concentration in river at SW-004	C r4 = 0.00833 (mg/L)
	concentration in river at SW-004A	C r4A = 0.00847 (mg/L)
	concentration in river at SW-005	C r5 = 0.00849 (mg/L)
	concentration in river at USGS Gage	C r6 = 0.00853 (mg/L)
	concentration in Colby Lake	C cl = 0.00849 (mg/L)

Partridge River Mass-Balance Model--Mine Site-Proposed Action

Case Parameter	Closure Beryllium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0001 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0001 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0001 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0001 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0001 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0001 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0001 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0001 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0001 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0001 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0001 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0001 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0001 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0001 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0001 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0001 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0001 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0001 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.0003 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.0023 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0023 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0023 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.0023 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0023 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0023 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	- (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0001 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0001 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0001 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Average Flow			
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	0.01279 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00074 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.00283 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	0.01454 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.00106 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.00434 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00042 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.00010 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.01715 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.00125 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.00010 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	0.06455 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.00567 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.00005 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	0.10225 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.00931 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.01098 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.00193 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	0.06667 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.00480 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00110 (mg/s)
Average Flow			
Mass balance at each node	mass flux in river at SW-001	M_r1 =	0.0164 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.0320 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.0368 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.0553 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.1256 (mg/s)
	mass flux in river at SW-005	M_r5 =	0.2371 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	0.2501 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	0.3226 (mg/s)
	Average Flow		
	concentration in river at SW-001	C_r1 =	0.00010 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00010 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00010 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00010 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00010 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00010 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00010 (mg/L)
	concentration in Colby Lake	C_cl =	0.00010 (mg/L)

Partridge River Mass-Balance Model--Mine Site-Proposed Action

Case Parameter	Closure Calcium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	17.0000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	17.0000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	17.0000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	17.0000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	17.0000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	17.0000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	17.0000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	17.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	17.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	24.5000 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	14.7900 (mg/L)
	concentration of ground water into SW-002	C_g2 =	14.7900 (mg/L)
	concentration of ground water into SW-003	C_g3 =	14.7900 (mg/L)
	concentration of ground water into SW-004	C_g4 =	14.7900 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	14.7900 (mg/L)
	concentration of ground water into SW-005	C_g5 =	14.7900 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	14.7900 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	14.7900 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	171.2790 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	435.9790 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	480.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	480.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	480.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	15.8000 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	435.9790 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	480.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	480.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	480.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	9.3700 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	14.7900 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	14.7900 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	14.7900 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Average Flow			
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	2,174.76906 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	75.34026 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	693.35000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	2,471.96076 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	107.89920 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	737.56752 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	42.58957 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	54.04623 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.39827 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.08270 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00025 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	2,915.31459 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	127.16988 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	54.04623 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.08270 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00397 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00047 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00022 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	10,974.02707 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	578.09279 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	104.24342 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00955 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	28.06213 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	17,383.03040 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	950.12439 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	1,866.70084 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	196.72179 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	11,334.71600 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	489.71169 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	187.62900 (mg/s)
Average Flow			
Mass balance at each node	mass flux in river at SW-001	M_r1 =	2,943.4593 (mg/s)
	mass flux in river at SW-002	M_r2 =	5,523.3193 (mg/s)
	mass flux in river at SW-003	M_r3 =	6,358.0038 (mg/s)
	mass flux in river at SW-004	M_r4 =	9,454.5219 (mg/s)
	mass flux in river at SW-004A	M_r4A =	21,139.0568 (mg/s)
	mass flux in river at SW-005	M_r5 =	39,472.2116 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	41,535.6343 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	53,547.6909 (mg/s)
	concentration in river at SW-001	C_r1 =	18.24591 (mg/L)
	concentration in river at SW-002	C_r2 =	17.58871 (mg/L)
	concentration in river at SW-003	C_r3 =	17.63130 (mg/L)
	concentration in river at SW-004	C_r4 =	17.47580 (mg/L)
	concentration in river at SW-004A	C_r4A =	17.21919 (mg/L)
	concentration in river at SW-005	C_r5 =	17.05492 (mg/L)
	concentration in river at USGS Gage	C_r6 =	17.04009 (mg/L)
	concentration in Colby Lake	C_cl =	17.00780 (mg/L)

Partridge River Mass-Balance Model--Mine Site-Proposed Action

Case Parameter	Closure Cadmium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0001 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0001 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0001 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0001 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0001 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0001 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0001 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0001 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0001 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0001 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0001 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0001 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0001 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0001 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0001 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0001 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0001 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0001 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.0009 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.0149 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0149 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0149 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.0149 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0149 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0149 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0001 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0001 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0001 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0001 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Average Flow			
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	0.01279 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00051 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.00283 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	0.01454 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.00073 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.00434 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00029 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.00027 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.01715 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.00086 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.00027 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	0.06455 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.00391 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.00004 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	0.10225 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.00642 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.01098 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.00133 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	0.06667 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.00331 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00110 (mg/s)
Average Flow			
Mass balance at each node	mass flux in river at SW-001	M_r1 =	0.0161 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.0314 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.0363 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.0546 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.1231 (mg/s)
	mass flux in river at SW-005	M_r5 =	0.2318 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	0.2441 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	0.3152 (mg/s)
	concentration in river at SW-001	C_r1 =	0.00010 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00010 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00010 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00010 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00010 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00010 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00010 (mg/L)
	concentration in Colby Lake	C_cl =	0.00010 (mg/L)

Partridge River Mass-Balance Model--Mine Site-Proposed Action

Case Parameter	Closure Chloride		
Input concentration data	concentration of surface water into SW-001	C_s1 =	8.0000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	8.0000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	8.0000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	8.0000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	8.0000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	8.0000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	8.0000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	8.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	8.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	1.6000 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	6.6000 (mg/L)
	concentration of ground water into SW-002	C_g2 =	6.6000 (mg/L)
	concentration of ground water into SW-003	C_g3 =	6.6000 (mg/L)
	concentration of ground water into SW-004	C_g4 =	6.6000 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	6.6000 (mg/L)
	concentration of ground water into SW-005	C_g5 =	6.6000 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	6.6000 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	6.6000 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	84.0696 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	- (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	- (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	- (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	- (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	2.3300 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	- (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	- (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	- (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	- (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	5.3500 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	6.6000 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	6.6000 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	6.6000 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Average Flow			
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	1,023.42074 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	33.62040 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	45.28000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	1,163.27565 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	48.14975 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	347.09060 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	19.00549 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	26.52774 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	- (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	- (mg/s)
	mass flux of surface water into SW-004	M_s4 =	1,371.91275 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	56.74924 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	26.52774 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	- (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	- (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	- (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	- (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	5,164.24803 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	257.97244 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	- (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	4.13828 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	8,180.24960 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	423.99060 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	878.44745 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	87.78660 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	5,333.98400 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	218.53260 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	88.29600 (mg/s)
Average Flow			
Mass balance at each node	mass flux in river at SW-001	M_r1 =	1,102.3211 (mg/s)
	mass flux in river at SW-002	M_r2 =	2,313.7465 (mg/s)
	mass flux in river at SW-003	M_r3 =	2,706.3704 (mg/s)
	mass flux in river at SW-004	M_r4 =	4,161.5601 (mg/s)
	mass flux in river at SW-004A	M_r4A =	9,587.9188 (mg/s)
	mass flux in river at SW-005	M_r5 =	18,192.1590 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	19,158.3931 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	24,799.2057 (mg/s)
	concentration in river at SW-001	C_r1 =	6.83307 (mg/L)
	concentration in river at SW-002	C_r2 =	7.36800 (mg/L)
	concentration in river at SW-003	C_r3 =	7.50500 (mg/L)
	concentration in river at SW-004	C_r4 =	7.69217 (mg/L)
	concentration in river at SW-004A	C_r4A =	7.81001 (mg/L)
	concentration in river at SW-005	C_r5 =	7.86036 (mg/L)
	concentration in river at USGS Gage	C_r6 =	7.85978 (mg/L)
	concentration in Colby Lake	C_cl =	7.87671 (mg/L)

Partridge River Mass-Balance Model--Mine Site-Proposed Action

Case Parameter	Closure Cobalt		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0005 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0005 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0005 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0005 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0005 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0005 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0005 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0005 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0005 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0005 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0017 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0017 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0017 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0017 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0017 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0017 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0017 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0017 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.0081 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0272 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	44.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	44.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	44.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0013 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0272 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	44.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	44.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	44.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0011 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0017 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0017 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0017 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Average Flow			
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	0.06396 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00841 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.01415 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	0.07270 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.01204 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.02169 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00475 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.00255 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.03651 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00758 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00002 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.08574 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.01419 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.00255 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00758 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00036 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00004 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00002 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	0.32277 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.06449 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.00650 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.00231 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	0.51127 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.10600 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.05490 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.02195 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	0.33337 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.05463 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00552 (mg/s)
Average Flow			
Mass balance at each node	mass flux in river at SW-001	M_r1 =	0.0865 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.1713 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.2444 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.3548 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.7509 (mg/s)
	mass flux in river at SW-005	M_r5 =	1.3692 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	1.4450 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	1.8386 (mg/s)
	concentration in river at SW-001	C_r1 =	0.00054 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00055 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00068 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00066 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00061 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00059 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00059 (mg/L)
	concentration in Colby Lake	C_cl =	0.00058 (mg/L)



**Partridge River Mass-Balance Model--Mine Site-Proposed Action**

Case Parameter	Closure Copper		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0017 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0017 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0017 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0017 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0017 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0017 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0017 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0017 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0190 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0012 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0030 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0030 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0030 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0030 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0030 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0030 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0030 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0030 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.0945 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0920 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	202.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	202.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	151.6343 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0170 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0920 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	202.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	202.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	151.6343 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0214 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0030 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0030 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0030 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	0.21748 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.01503 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.03509 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	0.24720 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.02152 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.07376 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00849 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.02981 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.16760 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.03480 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00011 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.29153 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.02537 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.02981 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.03480 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00125 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00020 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00007 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	1.09740 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.11531 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.02200 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.03019 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	1.73830 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.18951 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.18667 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.03924 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	1.13347 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.09768 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.20970 (mg/s)
Mass balance at each node	Average Flow		
	mass flux in river at SW-001	M_r1 =	0.2676 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.5363 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.8509 (mg/s)
	mass flux in river at SW-004	M_r4 =	1.2339 (mg/s)
	mass flux in river at SW-004A	M_r4A =	2.4988 (mg/s)
	mass flux in river at SW-005	M_r5 =	4.4266 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	4.6525 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	6.0934 (mg/s)
	Average Flow		
	concentration in river at SW-001	C_r1 =	0.00166 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00171 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00236 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00228 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00204 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00191 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00191 (mg/L)
	concentration in Colby Lake	C_cl =	0.00194 (mg/L)

Partridge River Mass-Balance Model--Mine Site-Proposed Action

Case Parameter	Closure Fluoride		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0700 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0700 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0700 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0700 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0700 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0700 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0700 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0700 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0700 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.1400 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.2800 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.2800 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.2800 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.2800 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.2800 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.2800 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.2800 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.2800 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	6.6821 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0623 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.0622 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0622 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0622 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.4200 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0623 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.0622 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0622 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0622 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.2239 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.2800 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.2800 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.2800 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Average Flow			
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	8.95493 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	1.42632 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	3.96200 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	10.17866 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	2.04272 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	3.03704 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.80629 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	2.10850 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00005 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	12.00424 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	2.40754 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	2.10850 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	45.18717 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	10.94429 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.01489 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.74596 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	71.57718 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	17.98748 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	7.68642 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	3.72428 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	46.67236 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	9.27108 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.77259 (mg/s)
Average Flow			
Mass balance at each node	mass flux in river at SW-001	M_r1 =	14.3433 (mg/s)
	mass flux in river at SW-002	M_r2 =	26.5646 (mg/s)
	mass flux in river at SW-003	M_r3 =	32.5165 (mg/s)
	mass flux in river at SW-004	M_r4 =	49.0368 (mg/s)
	mass flux in river at SW-004A	M_r4A =	105.9291 (mg/s)
	mass flux in river at SW-005	M_r5 =	195.4938 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	206.9045 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	263.6205 (mg/s)
	concentration in river at SW-001	C_r1 =	0.08891 (mg/L)
	concentration in river at SW-002	C_r2 =	0.08459 (mg/L)
	concentration in river at SW-003	C_r3 =	0.09017 (mg/L)
	concentration in river at SW-004	C_r4 =	0.09064 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.08629 (mg/L)
	concentration in river at SW-005	C_r5 =	0.08447 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.08488 (mg/L)
	concentration in Colby Lake	C_cl =	0.08373 (mg/L)

**Partridge River Mass-Balance Model--Mine Site-Proposed Action**

Case	Closure		
Parameter	Iron		
Input concentration data	concentration of surface water into SW-001	C s1 =	1.6000 (mg/L)
	concentration of surface water into SW-002	C s2 =	1.6000 (mg/L)
	concentration of surface water into SW-003	C s3 =	1.6000 (mg/L)
	concentration of surface water into SW-004	C s4 =	1.6000 (mg/L)
	concentration of surface water into SW-004A	C s4A =	1.6000 (mg/L)
	concentration of surface water into SW-005	C s5 =	1.6000 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	1.6000 (mg/L)
	concentration of surface water into Colby Lake	C scl =	1.6000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	1.6000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0300 (mg/L)
	concentration of West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	2.8440 (mg/L)
	concentration of ground water into SW-002	C g2 =	2.8440 (mg/L)
	concentration of ground water into SW-003	C g3 =	2.8440 (mg/L)
	concentration of ground water into SW-004	C g4 =	2.8440 (mg/L)
	concentration of ground water into SW-004A	C g4A =	2.8440 (mg/L)
	concentration of ground water into SW-005	C g5 =	2.8440 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	2.8440 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	2.8440 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	0.8101 (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	0.8100 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	235.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	235.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	235.0000 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	0.1500 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	0.8100 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C gC3s =	235.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	235.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	235.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.2255 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	2.8440 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	2.8440 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	2.8440 (mg/L)
	concentration of liner leakage from WWTF ponc	C gWTFp =	#N/A (mg/L)

		Average Flow	
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 = 204.68415 (mg/s)	
	mass flux of ground water into SW-001	M g1 = 14.48734 (mg/s)	
	mass flux of surface discharges from upstream of PM-1	M sns = 0.84900 (mg/s)	
	mass flux of surface water into SW-002	M s2 = 232.65513 (mg/s)	
	mass flux of ground water into SW-002	M g2 = 20.74816 (mg/s)	
	mass flux of surface water into SW-003	M s3 = 69.41812 (mg/s)	
	mass flux of ground water into SW-003	M g3 = 8.18964 (mg/s)	
	mass flux of seepage from East Pit to SW-003	M gep 003 = 0.25562 (mg/s)	
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M gC3 003 = 0.19499 (mg/s)	
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO 00 = 0.04049 (mg/s)	
	mass flux of liner leakage from Cat 3 sumps to SW-003	M gC3s 003 = 0.00012 (mg/s)	
	mass flux of surface water into SW-004	M s4 = 274.38255 (mg/s)	
	mass flux of ground water into SW-004	M g4 = 24.45376 (mg/s)	
	mass flux of seepage from East Pit to SW-004	M gep 004 = 0.25562 (mg/s)	
	mass flux of seepage from West Pit	M gwp = #N/A (mg/s)	
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M gC3 004 = - (mg/s)	
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO 00 = 0.04049 (mg/s)	
	mass flux of liner leakage from Cat 4 stockpile	M gC4 = 0.00194 (mg/s)	
	mass flux of liner leakage from LOSP	M gC4LO = #N/A (mg/s)	
	mass flux of seepage from Overburden (Storage)	M gOS = #N/A (mg/s)	
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs 0 = 0.00023 (mg/s)	
	mass flux of liner leakage from Cat 4 sumps	M gC4s = 0.00011 (mg/s)	
	mass flux of liner leakage from LOSP sumps	M gC4LOs = #N/A (mg/s)	
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 = - (mg/s)	
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 = - (mg/s)	
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 = - (mg/s)	
	mass flux of leakage from RTH Pond - PW3	M gRTHp = - (mg/s)	
	mass flux of liner leakage from WWTF pond	M gWTFp = #N/A (mg/s)	
	mass flux of surface water into SW-004A	M s4A = 1,032.84961 (mg/s)	
	mass flux of ground water into SW-004A	M g4A = 111.16267 (mg/s)	
	mass flux of West Pit overflow	M sms = #N/A (mg/s)	
	mass flux of liner leakage from Cat 1/2 stockpile	M gC12 = 0.19367 (mg/s)	
	mass flux of liner leakage from Cat 1/2 sumps	M gC12s = 0.00002 (mg/s)	
	mass flux of seepage from Overburden (Cat 1/2)	M gO12 = 0.26641 (mg/s)	
	mass flux of seepage from Overburden Pond - PW7	M gOp7 = #N/A (mg/s)	
	mass flux of surface water into SW-005	M s5 = 1,636.04992 (mg/s)	
	mass flux of ground water into SW-005	M g5 = 182.70140 (mg/s)	
	mass flux of surface water into USGS Gage	M s6 = 175.68949 (mg/s)	
	mass flux of ground water into USGS Gage	M g6 = 37.82804 (mg/s)	
	mass flux of surface water into Colby Lake	M scl = 1,066.79680 (mg/s)	
	mass flux of ground water into Colby Lake	M gcl = 94.16768 (mg/s)	
	mass flux of surface water from Hoyt Lakes WWTP	M shl = 17.65920 (mg/s)	
			Average Flow
	Mass balance at each node	mass flux in river at SW-001	M r1 = 220.0205 (mg/s)
mass flux in river at SW-002		M r2 = 473.4238 (mg/s)	
mass flux in river at SW-003		M r3 = 551.5228 (mg/s)	
mass flux in river at SW-004		M r4 = 850.6575 (mg/s)	
mass flux in river at SW-004A		M r4A = 1,995.1298 (mg/s)	
mass flux in river at SW-005		M r5 = 3,813.8812 (mg/s)	
mass flux in river at USGS Gage		M r6 = 4,027.3987 (mg/s)	
mass flux into Colby Lake	M cl = 5,206.0224 (mg/s)		
		Average Flow	
Convert mass flux to concentration	concentration in river at SW-001	C r1 = 1.36386 (mg/L)	
	concentration in river at SW-002	C r2 = 1.50759 (mg/L)	
	concentration in river at SW-003	C r3 = 1.52942 (mg/L)	
	concentration in river at SW-004	C r4 = 1.57234 (mg/L)	
	concentration in river at SW-004A	C r4A = 1.62517 (mg/L)	
	concentration in river at SW-005	C r5 = 1.64788 (mg/L)	
	concentration in river at USGS Gage	C r6 = 1.65225 (mg/L)	
	concentration in Colby Lake	C cl = 1.65353 (mg/L)	

Partridge River Mass-Balance Model--Mine Site-Proposed Action

Case Parameter	Closure Hardness		
Input concentration data	concentration of surface water into SW-001	C_s1 =	110.0000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	110.0000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	110.0000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	110.0000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	110.0000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	110.0000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	110.0000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	110.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	110.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	110.0000 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	66.4200 (mg/L)
	concentration of ground water into SW-002	C_g2 =	66.4200 (mg/L)
	concentration of ground water into SW-003	C_g3 =	66.4200 (mg/L)
	concentration of ground water into SW-004	C_g4 =	66.4200 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	66.4200 (mg/L)
	concentration of ground water into SW-005	C_g5 =	66.4200 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	66.4200 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	66.4200 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	566.0477 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	1,412.9373 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	5,435.6906 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	5,435.6906 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	5,435.6906 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	71.5000 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	1,412.9373 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	5,435.6906 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	5,435.6906 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	5,435.6906 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	43.5200 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	66.4200 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	66.4200 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	66.4200 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Average Flow			
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	14,072.03511 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	338.34348 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	3,113.00000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	15,995.04021 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	484.56154 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	4,772.49573 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	191.26430 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	178.61353 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	4.51014 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.93657 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00286 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	18,863.80026 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	571.10370 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	178.61353 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.93657 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.04490 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00534 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00248 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	71,008.41042 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	2,596.14083 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	337.83603 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.03096 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	126.99004 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	112,478.43201 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	4,266.88722 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	12,078.65247 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	883.45242 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	73,342.28000 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	2,199.23262 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	1,214.07000 (mg/s)
Average Flow			
Mass balance at each node	mass flux in river at SW-001	M_r1 =	17,523.3788 (mg/s)
	mass flux in river at SW-002	M_r2 =	34,002.9803 (mg/s)
	mass flux in river at SW-003	M_r3 =	39,150.8035 (mg/s)
	mass flux in river at SW-004	M_r4 =	58,765.3102 (mg/s)
	mass flux in river at SW-004A	M_r4A =	132,834.7165 (mg/s)
	mass flux in river at SW-005	M_r5 =	249,580.0377 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	262,542.1426 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	339,297.7253 (mg/s)
	concentration in river at SW-001	C_r1 =	108.62389 (mg/L)
	concentration in river at SW-002	C_r2 =	108.28062 (mg/L)
	concentration in river at SW-003	C_r3 =	108.56858 (mg/L)
	concentration in river at SW-004	C_r4 =	108.62106 (mg/L)
	concentration in river at SW-004A	C_r4A =	108.20287 (mg/L)
	concentration in river at SW-005	C_r5 =	107.83710 (mg/L)
	concentration in river at USGS Gage	C_r6 =	107.70853 (mg/L)
	concentration in Colby Lake	C_cl =	107.76761 (mg/L)

Partridge River Mass-Balance Model--Mine Site-Proposed Action

Case Parameter	Closure Potassium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	1.3000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	1.3000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	1.3000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	1.3000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	1.3000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	1.3000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	1.3000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	1.3000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	1.3000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	2.7000 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	1.7500 (mg/L)
	concentration of ground water into SW-002	C_g2 =	1.7500 (mg/L)
	concentration of ground water into SW-003	C_g3 =	1.7500 (mg/L)
	concentration of ground water into SW-004	C_g4 =	1.7500 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	1.7500 (mg/L)
	concentration of ground water into SW-005	C_g5 =	1.7500 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	1.7500 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	1.7500 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	27.1757 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	49.0000 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	38.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	38.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	38.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	4.4500 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	49.0000 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	38.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	38.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	38.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	2.2600 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	1.7500 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	1.7500 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	1.7500 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Average Flow			
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	166.30587 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	8.91450 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	76.41000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	189.03229 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	12.76698 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	56.40222 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	5.03933 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	8.57516 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.03153 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00	0.00655 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00002 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	222.93582 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	15.04715 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	8.57516 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00	0.00655 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00031 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0	0.00004 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00002 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	839.19030 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	68.40178 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	11.71599 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00107 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	7.90358 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	1,329.29056 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	112.42175 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	142.74771 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	23.27675 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	866.77240 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	57.94425 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	14.34810 (mg/s)
Average Flow			
Mass balance at each node	mass flux in river at SW-001	M_r1 =	251.6304 (mg/s)
	mass flux in river at SW-002	M_r2 =	453.4296 (mg/s)
	mass flux in river at SW-003	M_r3 =	523.4845 (mg/s)
	mass flux in river at SW-004	M_r4 =	770.0495 (mg/s)
	mass flux in river at SW-004A	M_r4A =	1,697.8622 (mg/s)
	mass flux in river at SW-005	M_r5 =	3,138.9745 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	3,304.9990 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	4,244.0638 (mg/s)
	concentration in river at SW-001	C_r1 =	1.55981 (mg/L)
	concentration in river at SW-002	C_r2 =	1.44392 (mg/L)
	concentration in river at SW-003	C_r3 =	1.45167 (mg/L)
	concentration in river at SW-004	C_r4 =	1.42335 (mg/L)
	concentration in river at SW-004A	C_r4A =	1.38253 (mg/L)
	concentration in river at SW-005	C_r5 =	1.35627 (mg/L)
	concentration in river at USGS Gage	C_r6 =	1.35588 (mg/L)
	concentration in Colby Lake	C_cl =	1.34800 (mg/L)



Partridge River Mass-Balance Model--Mine Site-Proposed Action

Case Parameter	Closure Magnesium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	8.0000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	8.0000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	8.0000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	8.0000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	8.0000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	8.0000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	8.0000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	8.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	8.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	10.5000 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	8.0200 (mg/L)
	concentration of ground water into SW-002	C_g2 =	8.0200 (mg/L)
	concentration of ground water into SW-003	C_g3 =	8.0200 (mg/L)
	concentration of ground water into SW-004	C_g4 =	8.0200 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	8.0200 (mg/L)
	concentration of ground water into SW-005	C_g5 =	8.0200 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	8.0200 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	8.0200 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	33.6859 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	79.1470 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	1,030.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	1,030.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	1,030.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	9.0100 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	79.1470 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	1,030.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	1,030.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	1,030.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	4.8800 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	8.0200 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	8.0200 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	8.0200 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Average Flow			
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	1,023.42074 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	40.85388 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	297.15000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	1,163.27565 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	58.50924 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	347.09060 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	23.09455 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	10.62942 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.85462 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.17747 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00054 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	1,371.91275 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	68.95892 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	10.62942 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.17747 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00851 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00101 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00047 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	5,164.24803 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	313.47560 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	18.92421 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00173 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	16.00252 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	8,180.24960 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	515.21282 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	878.44745 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	106.67402 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	5,333.98400 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	265.55022 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	88.29600 (mg/s)
Average Flow			
Mass balance at each node	mass flux in river at SW-001	M_r1 =	1,361.4248 (mg/s)
	mass flux in river at SW-002	M_r2 =	2,583.2095 (mg/s)
	mass flux in river at SW-003	M_r3 =	2,965.0567 (mg/s)
	mass flux in river at SW-004	M_r4 =	4,416.7452 (mg/s)
	mass flux in river at SW-004A	M_r4A =	9,929.3973 (mg/s)
	mass flux in river at SW-005	M_r5 =	18,624.8598 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	19,609.9812 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	25,297.8115 (mg/s)
	concentration in river at SW-001	C_r1 =	8.43920 (mg/L)
	concentration in river at SW-002	C_r2 =	8.22609 (mg/L)
	concentration in river at SW-003	C_r3 =	8.22236 (mg/L)
	concentration in river at SW-004	C_r4 =	8.16386 (mg/L)
	concentration in river at SW-004A	C_r4A =	8.08817 (mg/L)
	concentration in river at SW-005	C_r5 =	8.04732 (mg/L)
	concentration in river at USGS Gage	C_r6 =	8.04504 (mg/L)
	concentration in Colby Lake	C_cl =	8.03508 (mg/L)



Partridge River Mass-Balance Model--Mine Site-Proposed Action

Case	Closure			
Parameter	Manganese			
Input concentration data	concentration of surface water into SW-001	C s1 =	0.1500 (mg/L)	
	concentration of surface water into SW-002	C s2 =	0.1500 (mg/L)	
	concentration of surface water into SW-003	C s3 =	0.1500 (mg/L)	
	concentration of surface water into SW-004	C s4 =	0.1500 (mg/L)	
	concentration of surface water into SW-004A	C s4A =	0.1500 (mg/L)	
	concentration of surface water into SW-005	C s5 =	0.1500 (mg/L)	
	concentration of surface water into USGS Gage	C s6 =	0.1500 (mg/L)	
	concentration of surface water into Colby Lake	C scl =	0.1500 (mg/L)	
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.1500 (mg/L)	
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0086 (mg/L)	
	concentration of West Pit overflow	C sms =	#N/A (mg/L)	
	concentration of ground water into SW-001	C g1 =	0.1240 (mg/L)	
	concentration of ground water into SW-002	C g2 =	0.1240 (mg/L)	
	concentration of ground water into SW-003	C g3 =	0.1240 (mg/L)	
	concentration of ground water into SW-004	C g4 =	0.1240 (mg/L)	
	concentration of ground water into SW-004A	C g4A =	0.1240 (mg/L)	
	concentration of ground water into SW-005	C g5 =	0.1240 (mg/L)	
	concentration of ground water into USGS Gage	C g6 =	0.1240 (mg/L)	
	concentration of ground water into Colby Lake	C gcl =	0.1240 (mg/L)	
	concentration of ground water seepage from East Pit	C gep =	0.3232 (mg/L)	
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)	
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	0.5937 (mg/L)	
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	47.0000 (mg/L)	
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	47.0000 (mg/L)	
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	47.0000 (mg/L)	
	concentration of liner leakage from LOSP	C gC4LO =	#N/A (mg/L)	
	concentration of seepage from Overburden (Storage)	C gOS =	#N/A (mg/L)	
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	0.1160 (mg/L)	
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	0.5937 (mg/L)	
	concentration of liner leakage from Cat 3 sumps	C gC3s =	47.0000 (mg/L)	
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	47.0000 (mg/L)	
	concentration of liner leakage from Cat 4 sumps	C gC4s =	47.0000 (mg/L)	
	concentration of liner leakage from LOSP sumps	C gC4LOs =	#N/A (mg/L)	
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.1604 (mg/L)	
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)	
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.1240 (mg/L)	
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.1240 (mg/L)	
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.1240 (mg/L)	
	concentration of liner leakage from WWTF ponc	C gWTFp =	#N/A (mg/L)	
			Average Flow	
	Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	19.18914 (mg/s)
mass flux of ground water into SW-001		M g1 =	0.63166 (mg/s)	
mass flux of surface discharges from upstream of PM-1		M sns =	0.24338 (mg/s)	
mass flux of surface water into SW-002		M s2 =	21.81142 (mg/s)	
mass flux of ground water into SW-002		M g2 =	0.90463 (mg/s)	
mass flux of surface water into SW-003		M s3 =	6.50795 (mg/s)	
mass flux of ground water into SW-003		M g3 =	0.35707 (mg/s)	
mass flux of seepage from East Pit to SW-003		M gep 003 =	0.10199 (mg/s)	
mass flux of liner leakage from Cat 3 stockpile to SW-003		M gC3 003 =	0.03900 (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-003		M gC3LO 00 =	0.00810 (mg/s)	
mass flux of liner leakage from Cat 3 sumps to SW-003		M gC3s 003 =	0.00002 (mg/s)	
mass flux of surface water into SW-004		M s4 =	25.72336 (mg/s)	
mass flux of ground water into SW-004		M g4 =	1.06620 (mg/s)	
mass flux of seepage from East Pit to SW-004		M gep 004 =	0.10199 (mg/s)	
mass flux of seepage from West Pit		M gwp =	#N/A (mg/s)	
mass flux of liner leakage from Cat 3 stockpile to SW-004		M gC3 004 =	- (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-004		M gC3LO 00 =	0.00810 (mg/s)	
mass flux of liner leakage from Cat 4 stockpile		M gC4 =	0.00039 (mg/s)	
mass flux of liner leakage from LOSP		M gC4LO =	#N/A (mg/s)	
mass flux of seepage from Overburden (Storage)		M gOS =	#N/A (mg/s)	
mass flux of liner leakage from Cat 3LO sumps to SW-004		M gC3LOs 0 =	0.00005 (mg/s)	
mass flux of liner leakage from Cat 4 sumps		M gC4s =	0.00002 (mg/s)	
mass flux of liner leakage from LOSP sumps		M gC4LOs =	#N/A (mg/s)	
mass flux of seepage from Overburden Ponds - PW1		M gOp1 =	- (mg/s)	
mass flux of leakage from Haul Road Pond - PW2		M gHRp2 =	- (mg/s)	
mass flux of leakage from Haul Road Pond - PW4		M gHRp4 =	- (mg/s)	
mass flux of leakage from RTH Pond - PW3		M gRTHp =	- (mg/s)	
mass flux of liner leakage from WWTF pond		M gWTFp =	#N/A (mg/s)	
mass flux of surface water into SW-004A		M s4A =	96.82965 (mg/s)	
mass flux of ground water into SW-004A		M g4A =	4.84675 (mg/s)	
mass flux of West Pit overflow		M sms =	#N/A (mg/s)	
mass flux of liner leakage from Cat 1/2 stockpile		M gC12 =	0.14197 (mg/s)	
mass flux of liner leakage from Cat 1/2 sumps		M gC12s =	0.00001 (mg/s)	
mass flux of seepage from Overburden (Cat 1/2)		M gO12 =	0.20603 (mg/s)	
mass flux of seepage from Overburden Pond - PW7		M gOp7 =	#N/A (mg/s)	
mass flux of surface water into SW-005		M s5 =	153.37968 (mg/s)	
mass flux of ground water into SW-005		M g5 =	7.96588 (mg/s)	
mass flux of surface water into USGS Gage		M s6 =	16.47089 (mg/s)	
mass flux of ground water into USGS Gage		M g6 =	1.64932 (mg/s)	
mass flux of surface water into Colby Lake		M scl =	100.01220 (mg/s)	
mass flux of ground water into Colby Lake		M gcl =	4.10576 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP		M shl =	1.65555 (mg/s)	
		Average Flow		
Mass balance at each node	mass flux in river at SW-001	M r1 =	20.0642 (mg/s)	
	mass flux in river at SW-002	M r2 =	42.7802 (mg/s)	
	mass flux in river at SW-003	M r3 =	49.7944 (mg/s)	
	mass flux in river at SW-004	M r4 =	76.6945 (mg/s)	
	mass flux in river at SW-004A	M r4A =	178.7189 (mg/s)	
	mass flux in river at SW-005	M r5 =	340.0644 (mg/s)	
	mass flux in river at USGS Gage	M r6 =	358.1846 (mg/s)	
Convert mass flux to concentration	mass flux into Colby Lake	M cl =	463.9582 (mg/s)	
	Average Flow			
	concentration in river at SW-001	C r1 =	0.12437 (mg/L)	
	concentration in river at SW-002	C r2 =	0.13623 (mg/L)	
	concentration in river at SW-003	C r3 =	0.13808 (mg/L)	
	concentration in river at SW-004	C r4 =	0.14176 (mg/L)	
	concentration in river at SW-004A	C r4A =	0.14558 (mg/L)	
	concentration in river at SW-005	C r5 =	0.14693 (mg/L)	
	concentration in river at USGS Gage	C r6 =	0.14695 (mg/L)	
	concentration in Colby Lake	C cl =	0.14736 (mg/L)	

Partridge River Mass-Balance Model--Mine Site-Proposed Action

Case Parameter	Closure Sodium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	2.5000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	2.5000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	2.5000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	2.5000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	2.5000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	2.5000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	2.5000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	2.5000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	2.5000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	4.8000 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	13.3300 (mg/L)
	concentration of ground water into SW-002	C_g2 =	13.3300 (mg/L)
	concentration of ground water into SW-003	C_g3 =	13.3300 (mg/L)
	concentration of ground water into SW-004	C_g4 =	13.3300 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	13.3300 (mg/L)
	concentration of ground water into SW-005	C_g5 =	13.3300 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	13.3300 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	13.3300 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	647.0382 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	443.6984 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	338.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	338.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	338.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	7.1900 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	443.6984 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	338.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	338.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	338.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	4.6000 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	13.3300 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	13.3300 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	13.3300 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Average Flow			
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	319.81898 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	67.90302 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	135.84000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	363.52364 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	97.24790 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	108.46581 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	38.38532 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	204.16968 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.28045 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.05824 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00018 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	428.72273 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	114.61626 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	204.16968 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.05824 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00279 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00033 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00015 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	1,613.82751 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	521.02615 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	106.08914 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00972 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	12.77005 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	2,556.32800 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	856.33253 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	274.51483 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	177.30233 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	1,666.87000 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	441.36963 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	27.59250 (mg/s)
Average Flow			
Mass balance at each node	mass flux in river at SW-001	M_r1 =	523.5620 (mg/s)
	mass flux in river at SW-002	M_r2 =	984.3335 (mg/s)
	mass flux in river at SW-003	M_r3 =	1,335.6932 (mg/s)
	mass flux in river at SW-004	M_r4 =	2,083.2634 (mg/s)
	mass flux in river at SW-004A	M_r4A =	4,336.9860 (mg/s)
	mass flux in river at SW-005	M_r5 =	7,749.6465 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	8,201.4637 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	10,337.2958 (mg/s)
	concentration in river at SW-001	C_r1 =	3.24546 (mg/L)
	concentration in river at SW-002	C_r2 =	3.13456 (mg/L)
	concentration in river at SW-003	C_r3 =	3.70399 (mg/L)
	concentration in river at SW-004	C_r4 =	3.85068 (mg/L)
	concentration in river at SW-004A	C_r4A =	3.53277 (mg/L)
	concentration in river at SW-005	C_r5 =	3.34842 (mg/L)
	concentration in river at USGS Gage	C_r6 =	3.36467 (mg/L)
	concentration in Colby Lake	C_cl =	3.28333 (mg/L)

Partridge River Mass-Balance Model--Mine Site-Proposed Action

Case Parameter	Closure Nickel		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0016 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0016 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0016 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0016 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0016 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0016 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0016 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0016 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0033 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0016 (mg/L)
	concentration of West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0163 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0163 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0163 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0163 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0163 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0163 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0163 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0163 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	0.0807 (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	0.1762 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	762.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	762.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	762.0000 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	0.0190 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	0.1762 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C gC3s =	762.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	762.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	762.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0080 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0163 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0163 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0163 (mg/L)
	concentration of liner leakage from WWTF ponc	C gWTFp =	#N/A (mg/L)
		Average Flow	
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	0.19957 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.08293 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.04387 (mg/s)
	mass flux of surface water into SW-002	M s2 =	0.22684 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.11877 (mg/s)
	mass flux of surface water into SW-003	M s3 =	0.06768 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.04688 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep 003 =	0.02546 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M gC3 003 =	0.63225 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO 00 =	0.13129 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M gC3s 003 =	0.00040 (mg/s)
	mass flux of surface water into SW-004	M s4 =	0.26752 (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.13998 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep 004 =	0.02546 (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M gC3 004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO 00 =	0.13129 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00629 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs 0 =	0.00075 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00035 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M s4A =	1.00703 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.63633 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M gC12 =	0.04213 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M gO12 =	0.03375 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	1.59515 (mg/s)
	mass flux of ground water into SW-005	M g5 =	1.04584 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	0.17130 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.21654 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	1.04013 (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	0.53905 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.03642 (mg/s)
		Average Flow	
Mass balance at each node	mass flux in river at SW-001	M r1 =	0.3264 (mg/s)
	mass flux in river at SW-002	M r2 =	0.6720 (mg/s)
	mass flux in river at SW-003	M r3 =	1.5759 (mg/s)
	mass flux in river at SW-004	M r4 =	2.1476 (mg/s)
	mass flux in river at SW-004A	M r4A =	3.8668 (mg/s)
	mass flux in river at SW-005	M r5 =	6.5078 (mg/s)
	mass flux in river at USGS Gage	M r6 =	6.8956 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M cl =	8.5112 (mg/s)
		Average Flow	
Convert mass flux to concentration	concentration in river at SW-001	C r1 =	0.00202 (mg/L)
	concentration in river at SW-002	C r2 =	0.00214 (mg/L)
	concentration in river at SW-003	C r3 =	0.00437 (mg/L)
	concentration in river at SW-004	C r4 =	0.00397 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00315 (mg/L)
	concentration in river at SW-005	C r5 =	0.00281 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00283 (mg/L)
	concentration in Colby Lake	C cl =	0.00270 (mg/L)

Partridge River Mass-Balance Model--Mine Site-Proposed Action

Case Parameter	Closure Lead		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0005 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0005 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0005 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0005 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0005 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0005 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0005 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0005 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0005 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0002 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0011 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0011 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0011 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0011 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0011 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0011 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0011 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0011 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.0096 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0210 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.0528 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0528 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0528 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0210 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.0528 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0528 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0528 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0007 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0011 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0011 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0011 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Average Flow			
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	0.06396 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00571 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.00425 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	0.07270 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.00817 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.02169 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00323 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.00302 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00004 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.08574 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.00963 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.00302 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	0.32277 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.04378 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.00503 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	0.51127 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.07195 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.05490 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.01490 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	0.33337 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.03708 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00552 (mg/s)
Average Flow			
Mass balance at each node	mass flux in river at SW-001	M_r1 =	0.0739 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.1548 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.1828 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.2812 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.6528 (mg/s)
	mass flux in river at SW-005	M_r5 =	1.2360 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	1.3058 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	1.6818 (mg/s)
	concentration in river at SW-001	C_r1 =	0.00046 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00049 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00051 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00052 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00053 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00053 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00054 (mg/L)
	concentration in Colby Lake	C_cl =	0.00053 (mg/L)

Partridge River Mass-Balance Model--Mine Site-Proposed Action

Case Parameter	Closure Antimony		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0015 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0015 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0015 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0015 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0015 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0015 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0015 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0015 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0015 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0015 (mg/L)
	concentration of West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0015 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0015 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0015 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0015 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0015 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0015 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0015 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0015 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	0.0796 (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	0.0800 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	0.0800 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0800 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0800 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	0.0004 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	0.0800 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C gC3s =	0.0800 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.0800 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0800 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4Os =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0003 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0015 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0015 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0015 (mg/L)
	concentration of liner leakage from WWTF pond	C gWTFp =	#N/A (mg/L)

		Average Flow
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 = 0.19189 (mg/s)
	mass flux of ground water into SW-001	M g1 = 0.00764 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns = 0.04245 (mg/s)
	mass flux of surface water into SW-002	M s2 = 0.21811 (mg/s)
	mass flux of ground water into SW-002	M g2 = 0.01094 (mg/s)
	mass flux of surface water into SW-003	M s3 = 0.06508 (mg/s)
	mass flux of ground water into SW-003	M g3 = 0.00432 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep 003 = 0.02513 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M gC3 003 = 0.00007 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO 003 = 0.00001 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M gC3s 003 = 0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 = 0.25723 (mg/s)
	mass flux of ground water into SW-004	M g4 = 0.01290 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep 004 = 0.02513 (mg/s)
	mass flux of seepage from West Pit	M gwp = #N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M gC3 004 = - (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO 004 = 0.00001 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 = 0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO = #N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS = #N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs 004 = 0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s = 0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4Os = #N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 = - (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 = - (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 = - (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp = - (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp = #N/A (mg/s)
	mass flux of surface water into SW-004A	M s4A = 0.96830 (mg/s)
	mass flux of ground water into SW-004A	M g4A = 0.05863 (mg/s)
	mass flux of West Pit overflow	M sms = #N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M gC12 = 0.01913 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M gC12s = 0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M gO12 = 0.00071 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 = #N/A (mg/s)
	mass flux of surface water into SW-005	M s5 = 1.53380 (mg/s)
	mass flux of ground water into SW-005	M g5 = 0.09636 (mg/s)
	mass flux of surface water into USGS Gage	M s6 = 0.16471 (mg/s)
	mass flux of ground water into USGS Gage	M g6 = 0.01995 (mg/s)
	mass flux of surface water into Colby Lake	M scl = 1.00012 (mg/s)
	mass flux of ground water into Colby Lake	M gcl = 0.04967 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl = 0.01656 (mg/s)
		Average Flow
Mass balance at each node	mass flux in river at SW-001	M r1 = 0.2420 (mg/s)
	mass flux in river at SW-002	M r2 = 0.4710 (mg/s)
	mass flux in river at SW-003	M r3 = 0.5666 (mg/s)
	mass flux in river at SW-004	M r4 = 0.8609 (mg/s)
	mass flux in river at SW-004A	M r4A = 1.9077 (mg/s)
	mass flux in river at SW-005	M r5 = 3.5378 (mg/s)
	mass flux in river at USGS Gage	M r6 = 3.7225 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M cl = 4.7889 (mg/s)
		Average Flow
Convert mass flux to concentration	concentration in river at SW-001	C r1 = 0.00150 (mg/L)
	concentration in river at SW-002	C r2 = 0.00150 (mg/L)
	concentration in river at SW-003	C r3 = 0.00157 (mg/L)
	concentration in river at SW-004	C r4 = 0.00159 (mg/L)
	concentration in river at SW-004A	C r4A = 0.00155 (mg/L)
	concentration in river at SW-005	C r5 = 0.00153 (mg/L)
	concentration in river at USGS Gage	C r6 = 0.00153 (mg/L)
	concentration in Colby Lake	C cl = 0.00152 (mg/L)



Partridge River Mass-Balance Model--Mine Site-Proposed Action

Case Parameter	Closure Selenium			
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0005 (mg/L)	
	concentration of surface water into SW-002	C s2 =	0.0005 (mg/L)	
	concentration of surface water into SW-003	C s3 =	0.0005 (mg/L)	
	concentration of surface water into SW-004	C s4 =	0.0005 (mg/L)	
	concentration of surface water into SW-004A	C s4A =	0.0005 (mg/L)	
	concentration of surface water into SW-005	C s5 =	0.0005 (mg/L)	
	concentration of surface water into USGS Gage	C s6 =	0.0005 (mg/L)	
	concentration of surface water into Colby Lake	C scl =	0.0005 (mg/L)	
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0005 (mg/L)	
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0005 (mg/L)	
	concentration of West Pit overflow	C sms =	#N/A (mg/L)	
	concentration of ground water into SW-001	C g1 =	0.0019 (mg/L)	
	concentration of ground water into SW-002	C g2 =	0.0019 (mg/L)	
	concentration of ground water into SW-003	C g3 =	0.0019 (mg/L)	
	concentration of ground water into SW-004	C g4 =	0.0019 (mg/L)	
	concentration of ground water into SW-004A	C g4A =	0.0019 (mg/L)	
	concentration of ground water into SW-005	C g5 =	0.0019 (mg/L)	
	concentration of ground water into USGS Gage	C g6 =	0.0019 (mg/L)	
	concentration of ground water into Colby Lake	C gcl =	0.0019 (mg/L)	
	concentration of ground water seepage from East Pit	C gep =	0.0251 (mg/L)	
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)	
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	0.0029 (mg/L)	
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	0.0029 (mg/L)	
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0029 (mg/L)	
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0029 (mg/L)	
	concentration of liner leakage from LOSP	C gC4LO =	#N/A (mg/L)	
	concentration of seepage from Overburden (Storage)	C gOS =	#N/A (mg/L)	
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	0.0019 (mg/L)	
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	0.0029 (mg/L)	
	concentration of liner leakage from Cat 3 sumps	C gC3s =	0.0029 (mg/L)	
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.0029 (mg/L)	
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0029 (mg/L)	
	concentration of liner leakage from LOSP sumps	C gC4LOs =	#N/A (mg/L)	
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0004 (mg/L)	
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)	
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0019 (mg/L)	
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0019 (mg/L)	
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0019 (mg/L)	
	concentration of liner leakage from WWTF ponc	C gWTFp =	#N/A (mg/L)	
			Average Flow	
	Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	0.06396 (mg/s)
mass flux of ground water into SW-001		M g1 =	0.00973 (mg/s)	
mass flux of surface discharges from upstream of PM-1		M sns =	0.01415 (mg/s)	
mass flux of surface water into SW-002		M s2 =	0.07270 (mg/s)	
mass flux of ground water into SW-002		M g2 =	0.01393 (mg/s)	
mass flux of surface water into SW-003		M s3 =	0.02169 (mg/s)	
mass flux of ground water into SW-003		M g3 =	0.00550 (mg/s)	
mass flux of seepage from East Pit to SW-003		M gep 003 =	0.00791 (mg/s)	
mass flux of liner leakage from Cat 3 stockpile to SW-003		M gC3 003 =	0.00000 (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-003		M gC3LO 00 =	0.00000 (mg/s)	
mass flux of liner leakage from Cat 3 sumps to SW-003		M gC3s 003 =	0.00000 (mg/s)	
mass flux of surface water into SW-004		M s4 =	0.08574 (mg/s)	
mass flux of ground water into SW-004		M g4 =	0.01642 (mg/s)	
mass flux of seepage from East Pit to SW-004		M gep 004 =	0.00791 (mg/s)	
mass flux of seepage from West Pit		M gwp =	#N/A (mg/s)	
mass flux of liner leakage from Cat 3 stockpile to SW-004		M gC3 004 =	- (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-004		M gC3LO 00 =	0.00000 (mg/s)	
mass flux of liner leakage from Cat 4 stockpile		M gC4 =	0.00000 (mg/s)	
mass flux of liner leakage from LOSP		M gC4LO =	#N/A (mg/s)	
mass flux of seepage from Overburden (Storage)		M gOS =	#N/A (mg/s)	
mass flux of liner leakage from Cat 3LO sumps to SW-004		M gC3LOs 0 =	0.00000 (mg/s)	
mass flux of liner leakage from Cat 4 sumps		M gC4s =	0.00000 (mg/s)	
mass flux of liner leakage from LOSP sumps		M gC4LOs =	#N/A (mg/s)	
mass flux of seepage from Overburden Ponds - PW1		M gOp1 =	- (mg/s)	
mass flux of leakage from Haul Road Pond - PW2		M gHRp2 =	- (mg/s)	
mass flux of leakage from Haul Road Pond - PW4		M gHRp4 =	- (mg/s)	
mass flux of leakage from RTH Pond - PW3		M gRTHp =	- (mg/s)	
mass flux of liner leakage from WWTF pond		M gWTFp =	#N/A (mg/s)	
mass flux of surface water into SW-004A		M s4A =	0.32277 (mg/s)	
mass flux of ground water into SW-004A		M g4A =	0.07466 (mg/s)	
mass flux of West Pit overflow		M sms =	#N/A (mg/s)	
mass flux of liner leakage from Cat 1/2 stockpile		M gC12 =	0.00069 (mg/s)	
mass flux of liner leakage from Cat 1/2 sumps		M gC12s =	0.00000 (mg/s)	
mass flux of seepage from Overburden (Cat 1/2)		M gO12 =	0.00337 (mg/s)	
mass flux of seepage from Overburden Pond - PW7		M gOp7 =	#N/A (mg/s)	
mass flux of surface water into SW-005		M s5 =	0.51127 (mg/s)	
mass flux of ground water into SW-005		M g5 =	0.12270 (mg/s)	
mass flux of surface water into USGS Gage		M s6 =	0.05490 (mg/s)	
mass flux of ground water into USGS Gage		M g6 =	0.02540 (mg/s)	
mass flux of surface water into Colby Lake		M scl =	0.33337 (mg/s)	
mass flux of ground water into Colby Lake		M gcl =	0.06324 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP		M shl =	0.00552 (mg/s)	
		Average Flow		
Mass balance at each node	mass flux in river at SW-001	M r1 =	0.0878 (mg/s)	
	mass flux in river at SW-002	M r2 =	0.1745 (mg/s)	
	mass flux in river at SW-003	M r3 =	0.2096 (mg/s)	
	mass flux in river at SW-004	M r4 =	0.3197 (mg/s)	
	mass flux in river at SW-004A	M r4A =	0.7212 (mg/s)	
	mass flux in river at SW-005	M r5 =	1.3551 (mg/s)	
	mass flux in river at USGS Gage	M r6 =	1.4354 (mg/s)	
Convert mass flux to concentration	mass flux into Colby Lake	M cl =	1.8376 (mg/s)	
		Average Flow		
Convert mass flux to concentration	concentration in river at SW-001	C r1 =	0.00054 (mg/L)	
	concentration in river at SW-002	C r2 =	0.00056 (mg/L)	
	concentration in river at SW-003	C r3 =	0.00058 (mg/L)	
	concentration in river at SW-004	C r4 =	0.00059 (mg/L)	
	concentration in river at SW-004A	C r4A =	0.00059 (mg/L)	
	concentration in river at SW-005	C r5 =	0.00059 (mg/L)	
	concentration in river at USGS Gage	C r6 =	0.00059 (mg/L)	
	concentration in Colby Lake	C cl =	0.00058 (mg/L)	



Partridge River Mass-Balance Model--Mine Site-Proposed Action

Case Parameter	Closure Sulfates		
Input concentration data	concentration of surface water into SW-001	C_s1 =	9.0000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	9.0000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	9.0000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	9.0000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	9.0000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	9.0000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	9.0000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	9.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	9.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	22.0000 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	16.1300 (mg/L)
	concentration of ground water into SW-002	C_g2 =	16.1300 (mg/L)
	concentration of ground water into SW-003	C_g3 =	16.1300 (mg/L)
	concentration of ground water into SW-004	C_g4 =	16.1300 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	16.1300 (mg/L)
	concentration of ground water into SW-005	C_g5 =	16.1300 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	16.1300 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	16.1300 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	324.2635 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	980.8782 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	9,600.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	9,600.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	9,600.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	68.3000 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	980.8782 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	9,600.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	9,600.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	9,600.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	35.1700 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	16.1300 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	16.1300 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	16.1300 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Average Flow			
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	1,151.34833 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	82.16622 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	622.60000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	1,308.68511 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	117.67506 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	390.47692 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	46.44826 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	102.31973 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	7.96537 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	1.65408 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00505 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	1,543.40184 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	138.69170 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	102.31973 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	1.65408 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.07930 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00942 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00438 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	5,809.77903 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	630.46901 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	234.52986 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.02149 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	121.30657 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	9,202.78080 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	1,036.20733 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	988.25338 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	214.54513 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	6,000.73200 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	534.08043 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	99.33300 (mg/s)
Average Flow			
Mass balance at each node	mass flux in river at SW-001	M_r1 =	1,856.1145 (mg/s)
	mass flux in river at SW-002	M_r2 =	3,282.4747 (mg/s)
	mass flux in river at SW-003	M_r3 =	3,831.3441 (mg/s)
	mass flux in river at SW-004	M_r4 =	5,617.5046 (mg/s)
	mass flux in river at SW-004A	M_r4A =	12,413.6106 (mg/s)
	mass flux in river at SW-005	M_r5 =	22,652.5967 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	23,855.3972 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	30,489.5426 (mg/s)
	concentration in river at SW-001	C_r1 =	11.50568 (mg/L)
	concentration in river at SW-002	C_r2 =	10.45286 (mg/L)
	concentration in river at SW-003	C_r3 =	10.62465 (mg/L)
	concentration in river at SW-004	C_r4 =	10.38332 (mg/L)
	concentration in river at SW-004A	C_r4A =	10.11173 (mg/L)
	concentration in river at SW-005	C_r5 =	9.78760 (mg/L)
	concentration in river at USGS Gage	C_r6 =	9.78673 (mg/L)
	concentration in Colby Lake	C_cl =	9.68408 (mg/L)

Partridge River Mass-Balance Model--Mine Site-Proposed Action

Case Parameter	Closure	Thallium	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0004 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0004 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0004 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0004 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0004 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0004 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0004 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0004 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0004 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0003 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0000 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0000 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0000 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0000 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0000 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0000 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0000 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0000 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.0006 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0000 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.0001 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0001 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0001 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0000 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.0001 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0001 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0001 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0000 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0000 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0000 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0000 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Average Flow			
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	0.05117 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00002 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.00809 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	0.05816 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.00003 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.01735 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00001 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.00020 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.06860 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.00003 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.00020 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	0.25821 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.00016 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	0.40901 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.00026 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.04392 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.00005 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	0.26670 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.00013 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00441 (mg/s)
Average Flow			
Mass balance at each node	mass flux in river at SW-001	M_r1 =	0.0593 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.1175 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.1360 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.2039 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.4623 (mg/s)
	mass flux in river at SW-005	M_r5 =	0.8715 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	0.9155 (mg/s)
	mass flux into Colby Lake	M_cl =	1.1867 (mg/s)
Average Flow			
Convert mass flux to concentration	concentration in river at SW-001	C_r1 =	0.00037 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00037 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00037 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00038 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00038 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00038 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00038 (mg/L)
	concentration in Colby Lake	C_cl =	0.00038 (mg/L)

Partridge River Mass-Balance Model--Mine Site-Proposed Action

Case Parameter	Closure Vanadium		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0009 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0009 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0009 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0009 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0009 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0009 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0009 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0009 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0009 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0043 (mg/L)
	concentration of West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0043 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0043 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0043 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0043 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0043 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0043 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0043 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0043 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	0.1031 (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	0.6497 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	10.2217 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	12.7656 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	2.0895 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	0.0014 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	0.6497 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C gC3s =	10.2217 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	12.7656 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	2.0895 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0017 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0043 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0043 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0043 (mg/L)
	concentration of liner leakage from WWTF ponc	C gWTFp =	#N/A (mg/L)
		Average Flow	
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	0.11513 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.12190 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.12169 (mg/s)
	mass flux of surface water into SW-002	M s2 =	0.13087 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.03137 (mg/s)
	mass flux of surface water into SW-003	M s3 =	0.03905 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.01238 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep 003 =	0.03253 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M gC3 003 =	0.00848 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO 00 =	0.00220 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M gC3s 003 =	0.00001 (mg/s)
	mass flux of surface water into SW-004	M s4 =	0.15434 (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.03697 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep 004 =	0.03253 (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M gC3 004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO 00 =	0.00220 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00002 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs 0 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M s4A =	0.58098 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.16807 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M gC12 =	0.15533 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M gC12s =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M gO12 =	0.00249 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	0.92028 (mg/s)
	mass flux of ground water into SW-005	M g5 =	0.27624 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	0.09883 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.05719 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	0.60007 (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	0.14238 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.00993 (mg/s)
		Average Flow	
Mass balance at each node	mass flux in river at SW-001	M r1 =	0.2587 (mg/s)
	mass flux in river at SW-002	M r2 =	0.4210 (mg/s)
	mass flux in river at SW-003	M r3 =	0.5166 (mg/s)
	mass flux in river at SW-004	M r4 =	0.7417 (mg/s)
	mass flux in river at SW-004A	M r4A =	1.6486 (mg/s)
	mass flux in river at SW-005	M r5 =	2.8451 (mg/s)
	mass flux in river at USGS Gage	M r6 =	3.0011 (mg/s)
mass flux into Colby Lake	M cl =	3.7535 (mg/s)	
		Average Flow	
Convert mass flux to concentration	concentration in river at SW-001	C r1 =	0.00160 (mg/L)
	concentration in river at SW-002	C r2 =	0.00134 (mg/L)
	concentration in river at SW-003	C r3 =	0.00143 (mg/L)
	concentration in river at SW-004	C r4 =	0.00137 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00134 (mg/L)
	concentration in river at SW-005	C r5 =	0.00123 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00123 (mg/L)
	concentration in Colby Lake	C cl =	0.00119 (mg/L)

Partridge River Mass-Balance Model--Mine Site-Proposed Action

Case Parameter	Closure Zinc			
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0160 (mg/L)	
	concentration of surface water into SW-002	C s2 =	0.0160 (mg/L)	
	concentration of surface water into SW-003	C s3 =	0.0160 (mg/L)	
	concentration of surface water into SW-004	C s4 =	0.0160 (mg/L)	
	concentration of surface water into SW-004A	C s4A =	0.0160 (mg/L)	
	concentration of surface water into SW-005	C s5 =	0.0160 (mg/L)	
	concentration of surface water into USGS Gage	C s6 =	0.0160 (mg/L)	
	concentration of surface water into Colby Lake	C scl =	0.0160 (mg/L)	
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0620 (mg/L)	
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0073 (mg/L)	
	concentration of West Pit overflow	C sms =	#N/A (mg/L)	
	concentration of ground water into SW-001	C g1 =	0.0275 (mg/L)	
	concentration of ground water into SW-002	C g2 =	0.0275 (mg/L)	
	concentration of ground water into SW-003	C g3 =	0.0275 (mg/L)	
	concentration of ground water into SW-004	C g4 =	0.0275 (mg/L)	
	concentration of ground water into SW-004A	C g4A =	0.0275 (mg/L)	
	concentration of ground water into SW-005	C g5 =	0.0275 (mg/L)	
	concentration of ground water into USGS Gage	C g6 =	0.0275 (mg/L)	
	concentration of ground water into Colby Lake	C gcl =	0.0275 (mg/L)	
	concentration of ground water seepage from East Pit	C gep =	0.1845 (mg/L)	
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)	
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	0.0900 (mg/L)	
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	26.0000 (mg/L)	
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	26.0000 (mg/L)	
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	26.0000 (mg/L)	
	concentration of liner leakage from LOSP	C gC4LO =	#N/A (mg/L)	
	concentration of seepage from Overburden (Storage)	C gOS =	#N/A (mg/L)	
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	0.0030 (mg/L)	
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	0.0900 (mg/L)	
	concentration of liner leakage from Cat 3 sumps	C gC3s =	26.0000 (mg/L)	
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	26.0000 (mg/L)	
	concentration of liner leakage from Cat 4 sumps	C gC4s =	26.0000 (mg/L)	
	concentration of liner leakage from LOSP sumps	C gC4LOs =	#N/A (mg/L)	
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0046 (mg/L)	
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)	
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0275 (mg/L)	
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0275 (mg/L)	
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0275 (mg/L)	
	concentration of liner leakage from WWTF ponc	C gWTFp =	#N/A (mg/L)	
				Average Flow
	Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	2.04684 (mg/s)
		mass flux of ground water into SW-001	M g1 =	0.14009 (mg/s)
		mass flux of surface discharges from upstream of PM-1	M sns =	0.20744 (mg/s)
mass flux of surface water into SW-002		M s2 =	2.32655 (mg/s)	
mass flux of ground water into SW-002		M g2 =	0.20062 (mg/s)	
mass flux of surface water into SW-003		M s3 =	0.69418 (mg/s)	
mass flux of ground water into SW-003		M g3 =	0.07919 (mg/s)	
mass flux of seepage from East Pit to SW-003		M gep 003 =	0.05823 (mg/s)	
mass flux of liner leakage from Cat 3 stockpile to SW-003		M gC3 003 =	0.02157 (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-003		M gC3LO 00 =	0.00448 (mg/s)	
mass flux of liner leakage from Cat 3 sumps to SW-003		M gC3s 003 =	0.00001 (mg/s)	
mass flux of surface water into SW-004		M s4 =	2.74383 (mg/s)	
mass flux of ground water into SW-004		M g4 =	0.23646 (mg/s)	
mass flux of seepage from East Pit to SW-004		M gep 004 =	0.05823 (mg/s)	
mass flux of seepage from West Pit		M gwp =	#N/A (mg/s)	
mass flux of liner leakage from Cat 3 stockpile to SW-004		M gC3 004 =	- (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-004		M gC3LO 00 =	0.00448 (mg/s)	
mass flux of liner leakage from Cat 4 stockpile		M gC4 =	0.00021 (mg/s)	
mass flux of liner leakage from LOSP		M gC4LO =	#N/A (mg/s)	
mass flux of seepage from Overburden (Storage)		M gOS =	#N/A (mg/s)	
mass flux of liner leakage from Cat 3LO sumps to SW-004		M gC3LOs 0 =	0.00003 (mg/s)	
mass flux of liner leakage from Cat 4 sumps		M gC4s =	0.00001 (mg/s)	
mass flux of liner leakage from LOSP sumps		M gC4LOs =	#N/A (mg/s)	
mass flux of seepage from Overburden Ponds - PW1		M gOp1 =	- (mg/s)	
mass flux of leakage from Haul Road Pond - PW2		M gHRp2 =	- (mg/s)	
mass flux of leakage from Haul Road Pond - PW4		M gHRp4 =	- (mg/s)	
mass flux of leakage from RTH Pond - PW3		M gRTHp =	- (mg/s)	
mass flux of liner leakage from WWTF pond		M gWTFp =	#N/A (mg/s)	
mass flux of surface water into SW-004A		M s4A =	10.32850 (mg/s)	
mass flux of ground water into SW-004A		M g4A =	1.07489 (mg/s)	
mass flux of West Pit overflow		M sms =	#N/A (mg/s)	
mass flux of liner leakage from Cat 1/2 stockpile		M gC12 =	0.02152 (mg/s)	
mass flux of liner leakage from Cat 1/2 sumps		M gC12s =	0.00000 (mg/s)	
mass flux of seepage from Overburden (Cat 1/2)		M gO12 =	0.00533 (mg/s)	
mass flux of seepage from Overburden Pond - PW7		M gOp7 =	#N/A (mg/s)	
mass flux of surface water into SW-005		M s5 =	16.36050 (mg/s)	
mass flux of ground water into SW-005		M g5 =	1.76663 (mg/s)	
mass flux of surface water into USGS Gage		M s6 =	1.75689 (mg/s)	
mass flux of ground water into USGS Gage		M g6 =	0.36578 (mg/s)	
mass flux of surface water into Colby Lake		M scl =	10.66797 (mg/s)	
mass flux of ground water into Colby Lake		M gcl =	0.91055 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP		M shl =	0.68429 (mg/s)	
			Average Flow	
Mass balance at each node	mass flux in river at SW-001	M r1 =	2.3944 (mg/s)	
	mass flux in river at SW-002	M r2 =	4.9215 (mg/s)	
	mass flux in river at SW-003	M r3 =	5.7792 (mg/s)	
	mass flux in river at SW-004	M r4 =	8.8225 (mg/s)	
	mass flux in river at SW-004A	M r4A =	20.2527 (mg/s)	
	mass flux in river at SW-005	M r5 =	38.3798 (mg/s)	
	mass flux in river at USGS Gage	M r6 =	40.5025 (mg/s)	
mass flux into Colby Lake	M cl =	52.7653 (mg/s)		
			Average Flow	
Convert mass flux to concentration	concentration in river at SW-001	C r1 =	0.01484 (mg/L)	
	concentration in river at SW-002	C r2 =	0.01567 (mg/L)	
	concentration in river at SW-003	C r3 =	0.01603 (mg/L)	
	concentration in river at SW-004	C r4 =	0.01631 (mg/L)	
	concentration in river at SW-004A	C r4A =	0.01650 (mg/L)	
	concentration in river at SW-005	C r5 =	0.01658 (mg/L)	
	concentration in river at USGS Gage	C r6 =	0.01662 (mg/L)	
concentration in Colby Lake	C cl =	0.01676 (mg/L)		

## Partridge River Mass-Balance--Mine Site-Proposed Action

### FLOWS

Case Flow	Closure High Flow Conditions			
Total flow in Partridge River	flow in river at SW-001	Q_r1_H =	85.35	(cfs)
	flow in river at SW-002	Q_r2_H =	169.47	(cfs)
	flow in river at SW-003	Q_r3_H =	224.22	(cfs)
	flow in river at SW-004	Q_r4_H =	285.80	(cfs)
	flow in river at SW-004A	Q_r4a_H =	912.37	(cfs)
	flow in river at SW-005	Q_r5_H =	1,080.22	(cfs)
	flow in river at USGS Gage	Q_r6_H =	1,081.85	(cfs)
	total flow into Colby Lake	Q_cl_H =	1,419.38	(cfs)
	flow check	Q_ck_H =	1,419.38	(cfs)
Input flow data	surface water flow into SW-001	Q_s1_H =	84.17	(cfs)
	surface water flow into SW-002	Q_s2_H =	83.86	(cfs)
	surface water flow into SW-003	Q_s3_H =	54.63	(cfs)
	surface water flow into SW-004	Q_s4_H =	61.27	(cfs)
	surface water flow into SW-004A	Q_s4a_H =	625.00	(cfs)
	surface water flow into SW-005	Q_s5_H =	165.58	(cfs)
	surface water flow into USGS Gage	Q_s6_H =	1.17	(cfs)
	surface water flow into Colby Lake	Q_scl_H =	335.97	(cfs)
	surface water inflow from Hoyt Lakes WWTP	Q_shl_H =	0.39	(cfs)
	surface water inflow from discharges upstream of PM-1	Q_sns_H =	1.00	(cfs)
	surface water flow from West Pit overflow	Q_sms_H =	-	(cfs)
	ground water flow into SW-001	Q_g1_H =	0.18	(cfs)
	ground water flow into SW-002	Q_g2_H =	0.26	(cfs)
	ground water flow into SW-003	Q_g3_H =	0.10	(cfs)
	ground water flow into SW-004	Q_g4_H =	0.30	(cfs)
	ground water flow into SW-004A	Q_g4a_H =	1.38	(cfs)
	ground water flow into SW-005	Q_g5_H =	2.27	(cfs)
	ground water flow into USGS Gage	Q_g6_H =	0.47	(cfs)
	ground water flow into Colby Lake	Q_gcl_H =	1.17	(cfs)
	ground water seepage from East Pit to SW-003	Q_gep_003_H =	0.0112	(cfs)
	ground water seepage from East Pit to SW-004	Q_gep_004_H =	0.0112	(cfs)
	ground water seepage from West Pit	Q_gwp_H =	-	(cfs)
	ground water liner leakage from Cat 1/2 stockpile	Q_gC12_H =	0.0225	(cfs)
	ground water liner leakage from Cat 3 stockpile to SW-003	Q_gC3_003_H =	0.0002	(cfs)
	ground water liner leakage from Cat 3 stockpile to SW-004	Q_gC3_004_H =	-	(cfs)
	ground water liner leakage from Cat 3LO stockpile to SW-003	Q_gC3LO_003_H =	0.0002	(cfs)
	ground water liner leakage from Cat 3LO stockpile to SW-004	Q_gC3LO_004_H =	0.0002	(cfs)
	ground water liner leakage from Cat 4 stockpile	Q_gC4_H =	0.0000	(cfs)
	ground water liner leakage from LO SP	Q_gC4LO_H =	-	(cfs)
	ground water seepage from Overburden Storage	Q_gOS_H =	-	(cfs)
	ground water seepage from Overburden (Cat 1/2)	Q_gO12_H =	0.1674	(cfs)
	ground water liner leakage from Cat 1/2 sumps	Q_gC12s_H =	0.0000	(cfs)
	ground water liner leakage from Cat 3 sumps	Q_gC3s_H =	0.0000	(cfs)
	ground water liner leakage from Cat 3LO sumps	Q_gC3LOs_H =	0.0000	(cfs)
	ground water liner leakage from Cat 4 sumps	Q_gC4s_H =	0.0000	(cfs)
	ground water liner leakage from LO SP sumps	Q_gC4LOs_H =	-	(cfs)
	ground water seepage from Overburden pond - PW1	Q_gOp1_H =	-	(cfs)
	ground water seepage from Overburden pond - PW7	Q_gOp7_H =	-	(cfs)
	ground water leakage from Haul Road pond - PW2	Q_gHRp2_H =	-	(cfs)
	ground water leakage from Haul Road pond - PW4	Q_gHRp4_H =	-	(cfs)
	ground water leakage from RTH pond - PW3	Q_gRTHp_H =	-	(cfs)
	ground water liner leakage from WWTF pond	Q_gWTFp_H =	-	(cfs)

Partridge River Mass-Balance--Mine Site-Proposed Action

Case Parameter	Closure Silver		
Input concentration data	Closure		
	High Flow Conditions	C s1 =	0.0001 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0001 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0001 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0001 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0001 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0001 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0001 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0001 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0001 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0001 (mg/L)
	concentration of West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C q1 =	0.0006 (mg/L)
	concentration of ground water into SW-002	C q2 =	0.0006 (mg/L)
	concentration of ground water into SW-003	C q3 =	0.0006 (mg/L)
	concentration of ground water into SW-004	C q4 =	0.0006 (mg/L)
	concentration of ground water into SW-004A	C q4A =	0.0006 (mg/L)
	concentration of ground water into SW-005	C q5 =	0.0006 (mg/L)
	concentration of ground water into USGS Gage	C q6 =	0.0006 (mg/L)
	concentration of ground water into Colby Lake	C qcl =	0.0006 (mg/L)
	concentration of ground water seepage from East Pit	C qep =	0.0012 (mg/L)
	concentration of ground water seepage from West Pit	C qwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C qC12 =	0.0007 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C qC3 =	0.0007 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C qC3LO =	0.0007 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C qC4 =	0.0007 (mg/L)
	concentration of liner leakage from LOSP	C qC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C qOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C qO12 =	- (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C qC12s =	0.0007 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C qC3s =	0.0007 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C qC3LOs =	0.0007 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C qC4s =	0.0007 (mg/L)
	concentration of liner leakage from LOSP sumps	C qC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C qOp1 =	- (mg/L)
	concentration of seepage from Overburden Pond - PW7	C qOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C qHRp2 =	0.0006 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C qHRp4 =	0.0006 (mg/L)
	concentration of leakage from RTH Pond - PW3	C qRTHp =	0.0006 (mg/L)
	concentration of liner leakage from WWTP pond	C qWTFp =	#N/A (mg/L)
Convert concentration to mass flux			High Flow
	mass flux of surface water into SW-001	M s1 =	0.23820 (mg/s)
	mass flux of ground water into SW-001	M q1 =	0.00280 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.00340 (mg/s)
	mass flux of surface water into SW-002	M s2 =	0.23733 (mg/s)
	mass flux of ground water into SW-002	M q2 =	0.00401 (mg/s)
	mass flux of surface water into SW-003	M s3 =	0.15461 (mg/s)
	mass flux of ground water into SW-003	M q3 =	0.00158 (mg/s)
	mass flux of seepage from East Pit to SW-003	M qep 003 =	0.00038 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M qC3 003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M qC3LO 003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M qC3s 003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	0.17339 (mg/s)
	mass flux of ground water into SW-004	M q4 =	0.00473 (mg/s)
	mass flux of seepage from East Pit to SW-004	M qep 004 =	0.00038 (mg/s)
	mass flux of seepage from West Pit	M qwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M qC3 004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M qC3LO 004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M qC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M qC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M qOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M qC3LOs 004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M qC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M qC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M qOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M qHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M qHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M qRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M qWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M s4A =	1.76875 (mg/s)
	mass flux of ground water into SW-004A	M q4A =	0.02150 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M qC12 =	0.00045 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M qC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M qO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M qOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	0.46858 (mg/s)
	mass flux of ground water into SW-005	M q5 =	0.03533 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	0.00330 (mg/s)
	mass flux of ground water into USGS Gage	M q6 =	0.00732 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	0.95080 (mg/s)
	mass flux of ground water into Colby Lake	M qcl =	0.01821 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.00110 (mg/s)
Mass balance at each node			High Flow
	mass flux in river at SW-001	M r1 =	0.2444 (mg/s)
	mass flux in river at SW-002	M r2 =	0.4857 (mg/s)
	mass flux in river at SW-003	M r3 =	0.6423 (mg/s)
	mass flux in river at SW-004	M r4 =	0.8208 (mg/s)
	mass flux in river at SW-004A	M r4A =	2.6115 (mg/s)
	mass flux in river at SW-005	M r5 =	3.1154 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M r6 =	3.1261 (mg/s)
	mass flux into Colby Lake	M cl =	4.0962 (mg/s)
			High Flow
	concentration in river at SW-001	C r1 =	0.00010 (mg/L)
	concentration in river at SW-002	C r2 =	0.00010 (mg/L)
	concentration in river at SW-003	C r3 =	0.00010 (mg/L)
	concentration in river at SW-004	C r4 =	0.00010 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00010 (mg/L)
	concentration in river at SW-005	C r5 =	0.00010 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00010 (mg/L)
	concentration in Colby Lake	C cl =	0.00011 (mg/L)



Partridge River Mass-Balance--Mine Site-Proposed Action

Case Parameter	Closure Aluminum		
Input concentration data	Closure		
	High Flow Conditions	C_s1 =	0.0700 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0700 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0700 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0700 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0700 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0700 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0700 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0700 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0700 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0173 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.1250 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.1250 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.1250 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.1250 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.1250 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.1250 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.1250 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.1250 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	1.6701 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	1.6800 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	83.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	83.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	83.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.1400 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	1.6800 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	83.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	83.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	83.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.4106 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.1250 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.1250 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.1250 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M_s1 =	166.74077 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.63675 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.48959 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	166.12908 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.91193 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	108.23013 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.35995 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.52699 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.37037 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.41501 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00004 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	121.37374 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	1.07480 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.52699 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.41501 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.05434 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00008 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00004 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	1,238.12483 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	4.88584 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	1.07123 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00004 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.66310 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	328.00904 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	8.03013 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	2.30986 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	1.66263 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	665.55657 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	4.13888 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.77259 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	167.8671 (mg/s)
	mass flux in river at SW-002	M_r2 =	334.9061 (mg/s)
	mass flux in river at SW-003	M_r3 =	444.8106 (mg/s)
	mass flux in river at SW-004	M_r4 =	568.2556 (mg/s)
	mass flux in river at SW-004A	M_r4A =	1,813.0007 (mg/s)
	mass flux in river at SW-005	M_r5 =	2,149.0398 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	2,153.0123 (mg/s)
	mass flux into Colby Lake	M_cl =	2,823.4804 (mg/s)
	High Flow		
	concentration in river at SW-001	C_r1 =	0.06950 (mg/L)
	concentration in river at SW-002	C_r2 =	0.06983 (mg/L)
	concentration in river at SW-003	C_r3 =	0.07010 (mg/L)
	concentration in river at SW-004	C_r4 =	0.07026 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.07022 (mg/L)
	concentration in river at SW-005	C_r5 =	0.07030 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.07032 (mg/L)
	concentration in Colby Lake	C_cl =	0.07196 (mg/L)

Partridge River Mass-Balance--Mine Site-Proposed Action

Case Parameter	Closure Arsenic		
Input concentration data	Closure		
	High Flow Conditions	C_s1 =	0.0021 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0021 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0021 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0021 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0021 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0021 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0021 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0021 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0021 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0065 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0022 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0022 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0022 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0022 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0022 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0022 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0022 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0022 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.0878 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.7100 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.7100 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.7100 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.7100 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0027 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.7100 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.7100 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.7100 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.7100 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0016 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0022 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0022 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0022 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M_s1 =	5.02604 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.01100 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.18395 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	5.00761 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.01576 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	3.26237 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00622 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.02769 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00317 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00355 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	3.65855 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.01857 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.02769 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00355 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00046 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	37.32062 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.08443 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.45272 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00002 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.01279 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	9.88713 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.13876 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.06963 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.02873 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	20.06178 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.07152 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.02329 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	5.2210 (mg/s)
	mass flux in river at SW-002	M_r2 =	10.2444 (mg/s)
	mass flux in river at SW-003	M_r3 =	13.5474 (mg/s)
	mass flux in river at SW-004	M_r4 =	17.2562 (mg/s)
	mass flux in river at SW-004A	M_r4A =	55.1268 (mg/s)
	mass flux in river at SW-005	M_r5 =	65.1527 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	65.2510 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	85.4076 (mg/s)
	High Flow		
	concentration in river at SW-001	C_r1 =	0.00216 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00214 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00214 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00213 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00214 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00213 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00213 (mg/L)
	concentration in Colby Lake	C_cl =	0.00222 (mg/L)

Partridge River Mass-Balance--Mine Site-Proposed Action

Case Parameter	Closure Boron		
Input concentration data	Closure		
	High Flow Conditions	C s1 =	0.0450 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0450 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0450 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0450 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0450 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0450 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0450 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0450 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0450 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0960 (mg/L)
	concentration of West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0870 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0870 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0870 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0870 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0870 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0870 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0870 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0870 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	0.3176 (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	0.7600 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	0.7600 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.7600 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.7600 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	0.0370 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	0.7600 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C gC3s =	0.7600 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.7600 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.7600 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0622 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0870 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0870 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0870 (mg/L)
	concentration of liner leakage from WWTF pond	C gWTFp =	#N/A (mg/L)
Convert concentration to mass flux			High Flow
	mass flux of surface water into SW-001	M s1 =	107.19050 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.44318 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	2.71680 (mg/s)
	mass flux of surface water into SW-002	M s2 =	106.79727 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.63470 (mg/s)
	mass flux of surface water into SW-003	M s3 =	69.57651 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.25053 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	0.10020 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M gC3_003 =	0.00339 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00380 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	78.02598 (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.74806 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	0.10020 (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00380 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00050 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M s4A =	795.93739 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	3.40055 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M gC12 =	0.48460 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M gC12s =	0.00002 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M gO12 =	0.17525 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	210.86295 (mg/s)
	mass flux of ground water into SW-005	M g5 =	5.58897 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	1.48491 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	1.15719 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	427.85780 (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	2.88066 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.49667 (mg/s)
Mass balance at each node			High Flow
	mass flux in river at SW-001	M r1 =	110.3505 (mg/s)
	mass flux in river at SW-002	M r2 =	217.7824 (mg/s)
	mass flux in river at SW-003	M r3 =	287.7169 (mg/s)
	mass flux in river at SW-004	M r4 =	366.5954 (mg/s)
	mass flux in river at SW-004A	M r4A =	1.166.5932 (mg/s)
	mass flux in river at SW-005	M r5 =	1.383.0451 (mg/s)
	mass flux in river at USGS Gage	M r6 =	1.385.6872 (mg/s)
Convert mass flux to concentration			High Flow
	concentration in river at SW-001	C r1 =	0.04569 (mg/L)
	concentration in river at SW-002	C r2 =	0.04541 (mg/L)
	concentration in river at SW-003	C r3 =	0.04534 (mg/L)
	concentration in river at SW-004	C r4 =	0.04532 (mg/L)
	concentration in river at SW-004A	C r4A =	0.04518 (mg/L)
	concentration in river at SW-005	C r5 =	0.04524 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.04526 (mg/L)
	concentration in Colby Lake	C cl =	0.04659 (mg/L)

Partridge River Mass-Balance--Mine Site-Proposed Action

Case Parameter	Closure Barium		
Input concentration data	Closure		
	High Flow Conditions	C_s1 =	0.0077 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0077 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0077 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0077 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0077 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0077 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0077 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0077 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0077 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0050 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0219 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0219 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0219 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0219 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0219 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0219 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0219 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0219 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.1547 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.1900 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.1900 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.1900 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.1900 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0140 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.1900 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.1900 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.1900 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.1900 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0168 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0219 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0219 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0219 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M_s1 =	18.29384 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.11166 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.14150 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	18.22673 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.15992 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	11.87439 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.06312 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.04880 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00085 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00095 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	13.31643 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.18848 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.04880 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00095 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00012 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	135.83998 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.85678 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.12115 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.06631 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	35.98728 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	1.40816 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.25342 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.29156 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	73.02106 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.72579 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.08476 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	18.5470 (mg/s)
	mass flux in river at SW-002	M_r2 =	36.9337 (mg/s)
	mass flux in river at SW-003	M_r3 =	48.9218 (mg/s)
	mass flux in river at SW-004	M_r4 =	62.4766 (mg/s)
	mass flux in river at SW-004A	M_r4A =	199.3608 (mg/s)
	mass flux in river at SW-005	M_r5 =	236.7562 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	237.3012 (mg/s)
	mass flux into Colby Lake	M_cl =	311.1328 (mg/s)
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C_r1 =	0.00768 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00770 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00771 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00772 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00772 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00774 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00775 (mg/L)
	concentration in Colby Lake	C_cl =	0.00813 (mg/L)

Partridge River Mass-Balance--Mine Site-Proposed Action

Case Parameter	Closure Beryllium		
Input concentration data	Closure		
	High Flow Conditions	C_s1 =	0.0001 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0001 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0001 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0001 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0001 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0001 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0001 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0001 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0001 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0001 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0001 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0001 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0001 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0001 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0001 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0001 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0001 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0001 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.0003 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.0023 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0023 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0023 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.0023 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0023 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0023 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	- (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0001 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0001 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0001 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M_s1 =	0.23820 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00074 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.00283 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	0.23733 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.00106 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.15461 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00042 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.00009 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.17339 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.00125 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.00009 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	1.76875 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.00567 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.00013 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	0.46858 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.00931 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.00330 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.00193 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	0.95080 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.00480 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00110 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	0.2418 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.4802 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.6353 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.8100 (mg/s)
	mass flux in river at SW-004A	M_r4A =	2.5846 (mg/s)
	mass flux in river at SW-005	M_r5 =	3.0625 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	3.0677 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	4.0244 (mg/s)
	High Flow		
	concentration in river at SW-001	C_r1 =	0.00010 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00010 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00010 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00010 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00010 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00010 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00010 (mg/L)
	concentration in Colby Lake	C_cl =	0.00010 (mg/L)

Partridge River Mass-Balance--Mine Site-Proposed Action

Case Parameter	Closure Calcium		
Input concentration data	Closure		
	High Flow Conditions	C_s1 =	17.0000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	17.0000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	17.0000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	17.0000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	17.0000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	17.0000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	17.0000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	17.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	17.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	24.5000 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	14.7900 (mg/L)
	concentration of ground water into SW-002	C_g2 =	14.7900 (mg/L)
	concentration of ground water into SW-003	C_g3 =	14.7900 (mg/L)
	concentration of ground water into SW-004	C_g4 =	14.7900 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	14.7900 (mg/L)
	concentration of ground water into SW-005	C_g5 =	14.7900 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	14.7900 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	14.7900 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	157.9055 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	302.5160 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	480.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	480.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	480.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	15.8000 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	302.5160 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	480.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	480.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	480.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	9.3700 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	14.7900 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	14.7900 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	14.7900 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M_s1 =	40,494.18700 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	75.34026 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	693.35000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	40,345.63365 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	107.89920 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	26,284.45915 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	42.58957 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	49.82630 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	2.14193 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	2.40006 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00025 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	29,476.48042 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	127.16988 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	49.82630 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	2.40006 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.31423 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00047 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00022 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	300,687.45844 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	578.09279 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	192.89457 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00663 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	74.83577 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	79,659.33735 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	950.12439 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	560.96522 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	196.72179 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	161,635.16700 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	489.71169 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	187.62900 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	41,262.8773 (mg/s)
	mass flux in river at SW-002	M_r2 =	81,716.4101 (mg/s)
	mass flux in river at SW-003	M_r3 =	108,097.8274 (mg/s)
	mass flux in river at SW-004	M_r4 =	137,754.0162 (mg/s)
	mass flux in river at SW-004A	M_r4A =	439,287.3074 (mg/s)
	mass flux in river at SW-005	M_r5 =	519,896.7691 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	520,654.4562 (mg/s)
	mass flux into Colby Lake	M_cl =	682,966.9638 (mg/s)
	High Flow		
	concentration in river at SW-001	C_r1 =	17.08321 (mg/L)
	concentration in river at SW-002	C_r2 =	17.03855 (mg/L)
	concentration in river at SW-003	C_r3 =	17.03583 (mg/L)
	concentration in river at SW-004	C_r4 =	17.03158 (mg/L)
	concentration in river at SW-004A	C_r4A =	17.01338 (mg/L)
	concentration in river at SW-005	C_r5 =	17.00666 (mg/L)
	concentration in river at USGS Gage	C_r6 =	17.00569 (mg/L)
	concentration in Colby Lake	C_cl =	17.01775 (mg/L)



Partridge River Mass-Balance--Mine Site-Proposed Action

Case Parameter	Closure Cadmium		
Input concentration data	Closure		
	High Flow Conditions	C_s1 =	0.0001 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0001 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0001 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0001 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0001 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0001 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0001 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0001 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0001 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0001 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0001 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0001 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0001 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0001 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0001 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0001 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0001 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0001 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.0006 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.0149 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0149 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0149 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.0149 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0149 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0149 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0001 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0001 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0001 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0001 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M_s1 =	0.23820 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00051 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.00283 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	0.23733 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.00073 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.15461 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00029 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.00020 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00007 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00007 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.17339 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.00086 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.00020 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00007 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00001 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	1.76875 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.00391 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.00011 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	0.46858 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.00642 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.00330 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.00133 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	0.95080 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.00331 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00110 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	0.2415 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.4796 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.6348 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.8094 (mg/s)
	mass flux in river at SW-004A	M_r4A =	2.5822 (mg/s)
	mass flux in river at SW-005	M_r5 =	3.0572 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	3.0618 (mg/s)
	mass flux into Colby Lake	M_cl =	4.9170 (mg/s)
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C_r1 =	0.00010 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00010 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00010 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00010 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00010 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00010 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00010 (mg/L)
	concentration in Colby Lake	C_cl =	0.00010 (mg/L)

Partridge River Mass-Balance--Mine Site-Proposed Action

Case Parameter	Closure Chloride		
Input concentration data	Closure		
	High Flow Conditions	C_s1 =	8.0000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	8.0000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	8.0000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	8.0000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	8.0000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	8.0000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	8.0000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	8.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	8.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	1.6000 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	6.6000 (mg/L)
	concentration of ground water into SW-002	C_g2 =	6.6000 (mg/L)
	concentration of ground water into SW-003	C_g3 =	6.6000 (mg/L)
	concentration of ground water into SW-004	C_g4 =	6.6000 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	6.6000 (mg/L)
	concentration of ground water into SW-005	C_g5 =	6.6000 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	6.6000 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	6.6000 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	67.8564 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	- (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	- (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	- (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	- (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	2.3300 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	- (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	- (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	- (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	- (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	5.3500 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	6.6000 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	6.6000 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	6.6000 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M_s1 =	19,056.08800 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	33.62040 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	45.28000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	18,986.18054 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	48.14975 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	12,369.15725 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	19,00549 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	21,41176 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	- (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	- (mg/s)
	mass flux of surface water into SW-004	M_s4 =	13,871.28491 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	56.74924 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	21,41176 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	- (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	- (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	- (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	- (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	141,499.98044 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	257.97244 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	- (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	11.03591 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	37,486.74699 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	423.99060 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	263.98363 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	87.78660 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	76,063.60800 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	218.53260 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	88.29600 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	19,134.9884 (mg/s)
	mass flux in river at SW-002	M_r2 =	38,169.3187 (mg/s)
	mass flux in river at SW-003	M_r3 =	50,578.8932 (mg/s)
	mass flux in river at SW-004	M_r4 =	64,528.3391 (mg/s)
	mass flux in river at SW-004A	M_r4A =	206,297.3279 (mg/s)
	mass flux in river at SW-005	M_r5 =	244,208.0655 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	244,559.8357 (mg/s)
	mass flux into Colby Lake	M_cl =	320,930.2723 (mg/s)
	High Flow		
	concentration in river at SW-001	C_r1 =	7.92206 (mg/L)
	concentration in river at SW-002	C_r2 =	7.95862 (mg/L)
	concentration in river at SW-003	C_r3 =	7.97105 (mg/L)
	concentration in river at SW-004	C_r4 =	7.97813 (mg/L)
	concentration in river at SW-004A	C_r4A =	7.98979 (mg/L)
	concentration in river at SW-005	C_r5 =	7.98844 (mg/L)
	concentration in river at USGS Gage	C_r6 =	7.98785 (mg/L)
	concentration in Colby Lake	C_cl =	7.93133 (mg/L)

Partridge River Mass-Balance--Mine Site-Proposed Action

Case Parameter	Closure Cobalt		
Input concentration data	Closure		
	High Flow Conditions	C s1 =	0.0005 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0005 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0005 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0005 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0005 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0005 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0005 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0005 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0005 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0005 (mg/L)
	concentration of West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0017 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0017 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0017 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0017 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0017 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0017 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0017 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0017 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	0.0085 (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	0.0189 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	44.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	44.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	44.0000 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	0.0013 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	0.0189 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C gC3s =	44.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	44.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	44.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0011 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0017 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0017 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0017 (mg/L)
	concentration of liner leakage from WWTF pond	C gWTFp =	#N/A (mg/L)
Convert concentration to mass flux			High Flow
	mass flux of surface water into SW-001	M s1 =	1.19101 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.00841 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.01415 (mg/s)
	mass flux of surface water into SW-002	M s2 =	1.18664 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.01204 (mg/s)
	mass flux of surface water into SW-003	M s3 =	0.77307 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.00475 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep 003 =	0.00268 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M gC3 003 =	0.19634 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO 00	0.22001 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M gC3s 003	0.00002 (mg/s)
	mass flux of surface water into SW-004	M s4 =	0.86696 (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.01419 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep 004 =	0.00268 (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M gC3 004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO 00	0.22001 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.02880 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs 0	0.00004 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00002 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M s4A =	8.84375 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.06449 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M gC12 =	0.01204 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M gO12 =	0.00616 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	2.34292 (mg/s)
	mass flux of ground water into SW-005	M g5 =	0.10600 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	0.01650 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.02195 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	4.75398 (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	0.05463 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.00552 (mg/s)
Mass balance at each node			High Flow
	mass flux in river at SW-001	M r1 =	1.2138 (mg/s)
	mass flux in river at SW-002	M r2 =	2.4122 (mg/s)
	mass flux in river at SW-003	M r3 =	3.6091 (mg/s)
	mass flux in river at SW-004	M r4 =	4.7418 (mg/s)
	mass flux in river at SW-004A	M r4A =	13.6663 (mg/s)
	mass flux in river at SW-005	M r5 =	16.1172 (mg/s)
	mass flux in river at USGS Gage	M r6 =	16.1556 (mg/s)
	mass flux into Colby Lake	M cl =	20.9697 (mg/s)
Convert mass flux to concentration			High Flow
	concentration in river at SW-001	C r1 =	0.00050 (mg/L)
	concentration in river at SW-002	C r2 =	0.00050 (mg/L)
	concentration in river at SW-003	C r3 =	0.00057 (mg/L)
	concentration in river at SW-004	C r4 =	0.00059 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00053 (mg/L)
	concentration in river at SW-005	C r5 =	0.00053 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00053 (mg/L)
	concentration in Colby Lake	C cl =	0.00065 (mg/L)

**Partridge River Mass-Balance--Mine Site-Proposed Action**

Case	Closure
Parameter	Copper
<b>Closure</b>	
<b>Input concentration data</b>	High Flow Conditions
	concentration of surface water into SW-002
	concentration of surface water into SW-003
	concentration of surface water into SW-004
	concentration of surface water into SW-004A
	concentration of surface water into SW-005
	concentration of surface water into USGS Gage
	concentration of surface water into Colby Lake
	concentration of surface water inflow from Hoyt Lakes WWTP
	concentration of surface water discharges from upstream of PM-1
	concentration of West Pit overflow
	concentration of ground water into SW-001
	concentration of ground water into SW-002
	concentration of ground water into SW-003
	concentration of ground water into SW-004
	concentration of ground water into SW-004A
	concentration of ground water into SW-005
	concentration of ground water into USGS Gage
	concentration of ground water into Colby Lake
	concentration of ground water seepage from East Pit
	concentration of ground water seepage from West Pit
	concentration of liner leakage from Cat 1/2 stockpile
	concentration of liner leakage from Cat 3 stockpile
	concentration of liner leakage from Cat 3LO stockpile
	concentration of liner leakage from Cat 4 stockpile
	concentration of liner leakage from LOSP
	concentration of seepage from Overburden (Storage)
	concentration of seepage from Overburden (Cat 1/2)
	concentration of liner leakage from Cat 1/2 sumps
	concentration of liner leakage from Cat 3 sumps
	concentration of liner leakage from Cat 3LO sumps
	concentration of liner leakage from Cat 4 sumps
	concentration of liner leakage from LOSP sumps
	concentration of seepage from Overburden Ponds - PW1
	concentration of seepage from Overburden Pond - PW7
	concentration of leakage from Haul Road Pond - PW2
	concentration of leakage from Haul Road Pond - PW4
	concentration of leakage from RTH Pond - PW3
	concentration of liner leakage from WWTF pond
<b>High Flow</b>	
<b>Convert concentration to mass flux</b>	mass flux of surface water into SW-001
	mass flux of ground water into SW-001
	mass flux of surface discharges from upstream of PM-1
	mass flux of surface water into SW-002
	mass flux of ground water into SW-002
	mass flux of surface water into SW-003
	mass flux of ground water into SW-003
	mass flux of seepage from East Pit to SW-003
	mass flux of liner leakage from Cat 3 stockpile to SW-003
	mass flux of liner leakage from Cat 3LO stockpile to SW-003
	mass flux of liner leakage from Cat 3 sumps to SW-003
	mass flux of surface water into SW-004
	mass flux of ground water into SW-004
	mass flux of seepage from East Pit to SW-004
	mass flux of seepage from West Pit
	mass flux of liner leakage from Cat 3 stockpile to SW-004
	mass flux of liner leakage from Cat 3LO stockpile to SW-004
	mass flux of liner leakage from Cat 4 stockpile
	mass flux of liner leakage from LOSP
	mass flux of seepage from Overburden (Storage)
	mass flux of liner leakage from Cat 3LO sumps to SW-004
	mass flux of liner leakage from Cat 4 sumps
	mass flux of liner leakage from LOSP sumps
	mass flux of seepage from Overburden Ponds - PW1
	mass flux of leakage from Haul Road Pond - PW2
	mass flux of leakage from Haul Road Pond - PW4
	mass flux of leakage from RTH Pond - PW3
	mass flux of liner leakage from WWTF pond
	mass flux of surface water into SW-004A
	mass flux of ground water into SW-004A
	mass flux of West Pit overflow
	mass flux of liner leakage from Cat 1/2 stockpile
	mass flux of liner leakage from Cat 1/2 sumps
	mass flux of seepage from Overburden (Cat 1/2)
	mass flux of seepage from Overburden Pond - PW7
	mass flux of surface water into SW-005
	mass flux of ground water into SW-005
	mass flux of surface water into USGS Gage
	mass flux of ground water into USGS Gage
	mass flux of surface water into Colby Lake
	mass flux of ground water into Colby Lake
	mass flux of surface water from Hoyt Lakes WWTP
<b>High Flow</b>	
<b>Mass balance at each node</b>	mass flux in river at SW-001
	mass flux in river at SW-002
	mass flux in river at SW-003
	mass flux in river at SW-004
	mass flux in river at SW-004A
	mass flux in river at SW-005
	mass flux in river at USGS Gage
<b>Convert mass flux to concentration</b>	concentration in river at SW-001
	concentration in river at SW-002
	concentration in river at SW-003
	concentration in river at SW-004
	concentration in river at SW-004A
	concentration in river at SW-005
	concentration in river at USGS Gage

Partridge River Mass-Balance--Mine Site-Proposed Action

Case Parameter	Closure Fluoride		
Input concentration data	Closure		
	High Flow Conditions	C_s1 =	0.0700 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0700 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0700 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0700 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0700 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0700 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0700 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0700 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0700 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.1400 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.2800 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.2800 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.2800 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.2800 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.2800 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.2800 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.2800 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.2800 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	4.3020 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0625 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.0622 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0622 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0622 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.4200 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0625 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.0622 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0622 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0622 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.2239 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.2800 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.2800 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.2800 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M_s1 =	166.74077 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	1.42632 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	3.96200 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	166.12908 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	2.04272 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	108.23013 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.80629 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	1.35746 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00028 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00	0.00031 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	121.37374 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	2.40754 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	1.35746 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00	0.00031 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00004 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	1,238.12483 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	10.94429 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.03986 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	1.98931 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	328.00904 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	17.98748 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	2.30986 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	3.72428 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	665.55657 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	9.27108 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.77259 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	172.1291 (mg/s)
	mass flux in river at SW-002	M_r2 =	340.3009 (mg/s)
	mass flux in river at SW-003	M_r3 =	450.6954 (mg/s)
	mass flux in river at SW-004	M_r4 =	575.8345 (mg/s)
	mass flux in river at SW-004A	M_r4A =	1,826.9327 (mg/s)
	mass flux in river at SW-005	M_r5 =	2,172.9293 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	2,178.9634 (mg/s)
	mass flux into Colby Lake	M_cl =	2,854.5636 (mg/s)
	High Flow		
	concentration in river at SW-001	C_r1 =	0.07126 (mg/L)
	concentration in river at SW-002	C_r2 =	0.07096 (mg/L)
	concentration in river at SW-003	C_r3 =	0.07103 (mg/L)
	concentration in river at SW-004	C_r4 =	0.07119 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.07076 (mg/L)
	concentration in river at SW-005	C_r5 =	0.07108 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.07117 (mg/L)
	concentration in Colby Lake	C_cl =	0.07712 (mg/L)

Partridge River Mass-Balance--Mine Site-Proposed Action

Case Parameter	Closure Iron		
Input concentration data	Closure		
	High Flow Conditions	C_s1 =	1.6000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	1.6000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	1.6000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	1.6000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	1.6000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	1.6000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	1.6000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	1.6000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	1.6000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0300 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	2.8440 (mg/L)
	concentration of ground water into SW-002	C_g2 =	2.8440 (mg/L)
	concentration of ground water into SW-003	C_g3 =	2.8440 (mg/L)
	concentration of ground water into SW-004	C_g4 =	2.8440 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	2.8440 (mg/L)
	concentration of ground water into SW-005	C_g5 =	2.8440 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	2.8440 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	2.8440 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.8108 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.8100 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	235.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	235.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	235.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.1500 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.8100 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	235.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	235.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	235.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.2255 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	2.8440 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	2.8440 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	2.8440 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M_s1 =	3,811.21760 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	14.48734 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.84900 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	3,797.23611 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	20.74816 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	2,473.83145 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	8.18964 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.25584 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	1.04865 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	1.17503 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00012 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	2,774.25698 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	24.45376 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.25584 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	1.17503 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.15384 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00023 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00011 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	28,299.99609 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	111.16267 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.51648 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00002 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.71047 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	7,497.34940 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	182.70140 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	52.79673 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	37.82804 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	15,212.72160 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	94.16768 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	17,65920 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	3,826.5539 (mg/s)
	mass flux in river at SW-002	M_r2 =	7,644.5382 (mg/s)
	mass flux in river at SW-003	M_r3 =	10,129.0389 (mg/s)
	mass flux in river at SW-004	M_r4 =	12,929.3349 (mg/s)
	mass flux in river at SW-004A	M_r4A =	41,341.7206 (mg/s)
	mass flux in river at SW-005	M_r5 =	49,021.7714 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	49,112.3962 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	64,436.9446 (mg/s)
	High Flow		
	concentration in river at SW-001	C_r1 =	1.58423 (mg/L)
	concentration in river at SW-002	C_r2 =	1.59395 (mg/L)
	concentration in river at SW-003	C_r3 =	1.59630 (mg/L)
	concentration in river at SW-004	C_r4 =	1.59855 (mg/L)
	concentration in river at SW-004A	C_r4A =	1.60114 (mg/L)
	concentration in river at SW-005	C_r5 =	1.60358 (mg/L)
	concentration in river at USGS Gage	C_r6 =	1.60412 (mg/L)
	concentration in Colby Lake	C_cl =	1.62917 (mg/L)



Partridge River Mass-Balance--Mine Site-Proposed Action

Case Parameter	Closure Hardness		
Input concentration data	Closure		
	High Flow Conditions	C_s1 =	110.0000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	110.0000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	110.0000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	110.0000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	110.0000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	110.0000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	110.0000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	110.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	110.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	110.0000 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	66.4200 (mg/L)
	concentration of ground water into SW-002	C_g2 =	66.4200 (mg/L)
	concentration of ground water into SW-003	C_g3 =	66.4200 (mg/L)
	concentration of ground water into SW-004	C_g4 =	66.4200 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	66.4200 (mg/L)
	concentration of ground water into SW-005	C_g5 =	66.4200 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	66.4200 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	66.4200 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	514.2125 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	980.4055 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	5,435.6906 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	5,435.6906 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	5,435.6906 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	71.5000 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	980.4055 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	5,435.6906 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	5,435.6906 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	5,435.6906 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	43.5200 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	66.4200 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	66.4200 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	66.4200 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux			High Flow
	mass flux of surface water into SW-001	M_s1 =	262,021.21000 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	338.34348 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	3,113.00000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	261,059.98247 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	484.56154 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	170,075.91215 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	191.26430 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	162.25717 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	24.25593 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	27.17914 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00286 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	190,730.16745 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	571.10370 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	162.25717 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	27.17914 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	3.55842 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00534 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00248 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	##### (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	2,596.14083 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	625.14007 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.02148 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	338.65554 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	515,442.77112 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	4,266.88722 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	3,629.77493 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	883.45242 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	##### (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	2,199.23262 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	1,214.07000 (mg/s)
Mass balance at each node			High Flow
	mass flux in river at SW-001	M_r1 =	265,472.5535 (mg/s)
	mass flux in river at SW-002	M_r2 =	527,017.0975 (mg/s)
	mass flux in river at SW-003	M_r3 =	697,497.9690 (mg/s)
	mass flux in river at SW-004	M_r4 =	888,992.2456 (mg/s)
	mass flux in river at SW-004A	M_r4A =	2,838,176.9346 (mg/s)
	mass flux in river at SW-005	M_r5 =	3,357,886.5929 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	3,362,399.8203 (mg/s)
	mass flux into Colby Lake	M_cl =	4,411,687.7329 (mg/s)
			High Flow
	concentration in river at SW-001	C_r1 =	109.90809 (mg/L)
	concentration in river at SW-002	C_r2 =	109.88742 (mg/L)
	concentration in river at SW-003	C_r3 =	109.92317 (mg/L)
	concentration in river at SW-004	C_r4 =	109.91289 (mg/L)
	concentration in river at SW-004A	C_r4A =	109.92118 (mg/L)
	concentration in river at SW-005	C_r5 =	109.84184 (mg/L)
	concentration in river at USGS Gage	C_r6 =	109.82315 (mg/L)
	concentration in Colby Lake	C_cl =	108.84923 (mg/L)

Partridge River Mass-Balance--Mine Site-Proposed Action

Case	Closure		
Parameter	Potassium		
Input concentration data	Closure		
	High Flow Conditions	C_s1 =	1.3000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	1.3000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	1.3000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	1.3000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	1.3000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	1.3000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	1.3000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	1.3000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	1.3000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	2.7000 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	1.7500 (mg/L)
	concentration of ground water into SW-002	C_g2 =	1.7500 (mg/L)
	concentration of ground water into SW-003	C_g3 =	1.7500 (mg/L)
	concentration of ground water into SW-004	C_g4 =	1.7500 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	1.7500 (mg/L)
	concentration of ground water into SW-005	C_g5 =	1.7500 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	1.7500 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	1.7500 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	25.9022 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	49.0000 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	38.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	38.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	38.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	4.4500 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	49.0000 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	38.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	38.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	38.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	2.2600 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	1.7500 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	1.7500 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	1.7500 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M_s1 =	3,096.61430 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	8.91450 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	76.41000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	3,085.25434 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	12.76698 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	2,009.98805 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	5.03933 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	8.17332 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.16957 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.19000 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00002 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	2,254.08380 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	15.04715 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	8.17332 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.19000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.02488 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00004 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00002 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	22,993.74682 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	68.40178 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	31.24408 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00107 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	21.07716 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	6,091.59639 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	112.42175 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	42.89734 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	23.27675 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	12,360.33630 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	57.94425 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	14.34810 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	3,181.9388 (mg/s)
	mass flux in river at SW-002	M_r2 =	6,279.9601 (mg/s)
	mass flux in river at SW-003	M_r3 =	8,303.5204 (mg/s)
	mass flux in river at SW-004	M_r4 =	10,581.0396 (mg/s)
	mass flux in river at SW-004A	M_r4A =	33,695.5106 (mg/s)
	mass flux in river at SW-005	M_r5 =	39,899.5287 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	39,965.7028 (mg/s)
	mass flux into Colby Lake	M_cl =	52,398.3314 (mg/s)
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C_r1 =	1.31735 (mg/L)
	concentration in river at SW-002	C_r2 =	1.30942 (mg/L)
	concentration in river at SW-003	C_r3 =	1.30860 (mg/L)
	concentration in river at SW-004	C_r4 =	1.30821 (mg/L)
	concentration in river at SW-004A	C_r4A =	1.30501 (mg/L)
	concentration in river at SW-005	C_r5 =	1.30518 (mg/L)
	concentration in river at USGS Gage	C_r6 =	1.30537 (mg/L)
	concentration in Colby Lake	C_cl =	1.32906 (mg/L)

Partridge River Mass-Balance--Mine Site-Proposed Action

Case	Closure		
Parameter	Magnesium		
Input concentration data	Closure		
	High Flow Conditions	C s1 =	8.0000 (mg/L)
	concentration of surface water into SW-002	C s2 =	8.0000 (mg/L)
	concentration of surface water into SW-003	C s3 =	8.0000 (mg/L)
	concentration of surface water into SW-004	C s4 =	8.0000 (mg/L)
	concentration of surface water into SW-004A	C s4A =	8.0000 (mg/L)
	concentration of surface water into SW-005	C s5 =	8.0000 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	8.0000 (mg/L)
	concentration of surface water into Colby Lake	C scl =	8.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	8.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	10.5000 (mg/L)
	concentration of West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	8.0200 (mg/L)
	concentration of ground water into SW-002	C g2 =	8.0200 (mg/L)
	concentration of ground water into SW-003	C g3 =	8.0200 (mg/L)
	concentration of ground water into SW-004	C g4 =	8.0200 (mg/L)
	concentration of ground water into SW-004A	C g4A =	8.0200 (mg/L)
	concentration of ground water into SW-005	C g5 =	8.0200 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	8.0200 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	8.0200 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	29.2091 (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	54.9183 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	1,030.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	1,030.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	1,030.0000 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	9.0100 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	54.9183 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C gC3s =	1,030.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	1,030.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	1,030.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	4.8800 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	8.0200 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	8.0200 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	8.0200 (mg/L)
	concentration of liner leakage from WWTF pond	C gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M s1 =	19,056.08800 (mg/s)
	mass flux of ground water into SW-001	M g1 =	40.85388 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	297.15000 (mg/s)
	mass flux of surface water into SW-002	M s2 =	18,986.18054 (mg/s)
	mass flux of ground water into SW-002	M g2 =	58.50924 (mg/s)
	mass flux of surface water into SW-003	M s3 =	12,369.15725 (mg/s)
	mass flux of ground water into SW-003	M g3 =	23.09455 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	9.21678 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M gC3_003 =	4.59622 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_00	5.15013 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M gC3s_003 =	0.00054 (mg/s)
	mass flux of surface water into SW-004	M s4 =	13,871.28491 (mg/s)
	mass flux of ground water into SW-004	M g4 =	68.95892 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	9.21678 (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_00	5.15013 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.67428 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_0	0.00101 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00047 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M s4A =	141,499.98044 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	313.47560 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M gC12 =	35.01781 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M gC12s =	0.00120 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M gO12 =	42.67533 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	37,486.74699 (mg/s)
	mass flux of ground water into SW-005	M g5 =	515.21282 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	263.98363 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	106.67402 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	76,063.60800 (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	265.55022 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl =	88.29600 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M r1 =	19,394.0919 (mg/s)
	mass flux in river at SW-002	M r2 =	38,438.7817 (mg/s)
	mass flux in river at SW-003	M r3 =	50,849.9971 (mg/s)
	mass flux in river at SW-004	M r4 =	64,805.2842 (mg/s)
	mass flux in river at SW-004A	M r4A =	206,698.4346 (mg/s)
	mass flux in river at SW-005	M r5 =	244,698.3944 (mg/s)
	mass flux in river at USGS Gage	M r6 =	245,069.0520 (mg/s)
	mass flux into Colby Lake	M cl =	321,486.5062 (mg/s)
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C r1 =	8.02933 (mg/L)
	concentration in river at SW-002	C r2 =	8.01480 (mg/L)
	concentration in river at SW-003	C r3 =	8.01378 (mg/L)
	concentration in river at SW-004	C r4 =	8.01237 (mg/L)
	concentration in river at SW-004A	C r4A =	8.00525 (mg/L)
	concentration in river at SW-005	C r5 =	8.00448 (mg/L)
	concentration in river at USGS Gage	C r6 =	8.00448 (mg/L)
	concentration in Colby Lake	C cl =	8.02301 (mg/L)

Partridge River Mass-Balance--Mine Site-Proposed Action

Case Parameter	Closure Manganese		
Input concentration data	Closure		
	High Flow Conditions	C_s1 =	0.1500 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.1500 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.1500 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.1500 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.1500 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.1500 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.1500 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.1500 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.1500 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0086 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.1240 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.1240 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.1240 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.1240 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.1240 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.1240 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.1240 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.1240 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.3302 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.4120 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	47.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	47.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	47.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.1160 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.4120 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	47.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	47.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	47.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.1604 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.1240 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.1240 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.1240 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M_s1 =	357.30165 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.63166 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.24338 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	355.99089 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.90463 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	231.92170 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.35707 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.10420 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.20973 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00	0.23501 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003	0.00002 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	260.08659 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	1.06620 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.10420 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00	0.23501 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.03077 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0	0.00005 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00002 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	2,653.12463 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	4.84675 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.26270 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.54943 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	702.87651 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	7.96588 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	4.94969 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	1.64932 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	1,426.19265 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	4.10576 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	1.65555 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	358.1767 (mg/s)
	mass flux in river at SW-002	M_r2 =	715.0722 (mg/s)
	mass flux in river at SW-003	M_r3 =	947.9999 (mg/s)
	mass flux in river at SW-004	M_r4 =	1,209.4228 (mg/s)
	mass flux in river at SW-004A	M_r4A =	3,868.2063 (mg/s)
	mass flux in river at SW-005	M_r5 =	4,579.0467 (mg/s)
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C_r1 =	0.14829 (mg/L)
	concentration in river at SW-002	C_r2 =	0.14910 (mg/L)
	concentration in river at SW-003	C_r3 =	0.14939 (mg/L)
	concentration in river at SW-004	C_r4 =	0.14953 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.14981 (mg/L)
	concentration in river at SW-005	C_r5 =	0.14979 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.14978 (mg/L)
	concentration in Colby Lake	C_cl =	0.14871 (mg/L)

Partridge River Mass-Balance--Mine Site-Proposed Action

Case Parameter	Closure Sodium		
Input concentration data	Closure		
	High Flow Conditions	C_s1 =	2.5000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	2.5000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	2.5000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	2.5000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	2.5000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	2.5000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	2.5000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	2.5000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	2.5000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	4.8000 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	13.3300 (mg/L)
	concentration of ground water into SW-002	C_g2 =	13.3300 (mg/L)
	concentration of ground water into SW-003	C_g3 =	13.3300 (mg/L)
	concentration of ground water into SW-004	C_g4 =	13.3300 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	13.3300 (mg/L)
	concentration of ground water into SW-005	C_g5 =	13.3300 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	13.3300 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	13.3300 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	532.5012 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	307.8723 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	338.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	338.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	338.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	7.1900 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	307.8723 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	338.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	338.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	338.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	4.6000 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	13.3300 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	13.3300 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	13.3300 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M_s1 =	5,955.02750 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	67.90302 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	135.84000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	5,933.18142 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	97.24790 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	3,865.36164 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	38.38532 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	168.02810 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	1.50827 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	1.69004 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00018 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	4,334.77653 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	114.61626 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	168.02810 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	1.69004 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.22127 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00033 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00015 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	44,218.74389 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	521.02615 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	196.30995 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00675 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	34.05501 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	11,714.60843 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	856.33253 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	82.49488 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	177.30233 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	23,769.87750 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	441.36963 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	27.59250 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	6,158.7705 (mg/s)
	mass flux in river at SW-002	M_r2 =	12,189.1998 (mg/s)
	mass flux in river at SW-003	M_r3 =	16,264.1734 (mg/s)
	mass flux in river at SW-004	M_r4 =	20,883.5063 (mg/s)
	mass flux in river at SW-004A	M_r4A =	65,853.6480 (mg/s)
	mass flux in river at SW-005	M_r5 =	78,424.5890 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	78,684.3862 (mg/s)
	mass flux into Colby Lake	M_cl =	102,923.2258 (mg/s)
	High Flow		
	concentration in river at SW-001	C_r1 =	2.54979 (mg/L)
	concentration in river at SW-002	C_r2 =	2.54155 (mg/L)
	concentration in river at SW-003	C_r3 =	2.56318 (mg/L)
	concentration in river at SW-004	C_r4 =	2.58199 (mg/L)
	concentration in river at SW-004A	C_r4A =	2.55048 (mg/L)
	concentration in river at SW-005	C_r5 =	2.56539 (mg/L)
	concentration in river at USGS Gage	C_r6 =	2.57000 (mg/L)
	concentration in Colby Lake	C_cl =	2.92420 (mg/L)



Partridge River Mass-Balance--Mine Site-Proposed Action

Case Parameter	Closure Nickel		
Input concentration data	Closure		
	High Flow Conditions	C_s1 =	0.0016 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0016 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0016 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0016 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0016 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0016 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0016 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0016 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0033 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0016 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0163 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0163 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0163 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0163 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0163 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0163 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0163 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0163 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.0842 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.1223 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	762.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	762.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	762.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0190 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.1223 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	762.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	762.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	762.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0080 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0163 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0163 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0163 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M_s1 =	3.71594 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.08293 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.04387 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	3.70231 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.11877 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	2.41199 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.04688 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.02656 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	3.40031 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00	3.81010 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00040 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	2.70490 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.13998 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.02656 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00	3.81010 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.49884 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0	0.00075 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00035 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	27.59250 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.63633 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.07795 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.08999 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	7.30992 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	1.04584 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.05148 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.21654 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	14.83240 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.53905 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.03642 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	3.8427 (mg/s)
	mass flux in river at SW-002	M_r2 =	7.6638 (mg/s)
	mass flux in river at SW-003	M_r3 =	17.3600 (mg/s)
	mass flux in river at SW-004	M_r4 =	24.5419 (mg/s)
	mass flux in river at SW-004A	M_r4A =	52.9387 (mg/s)
	mass flux in river at SW-005	M_r5 =	61.2944 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	61.5625 (mg/s)
	mass flux into Colby Lake	M_cl =	76.9703 (mg/s)
	High Flow		
	concentration in river at SW-001	C_r1 =	0.00159 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00160 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00274 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00303 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00205 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00201 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00201 (mg/L)
	concentration in Colby Lake	C_cl =	0.00399 (mg/L)



Partridge River Mass-Balance--Mine Site-Proposed Action

Case Parameter	Closure Lead		
Input concentration data	Closure		
	High Flow Conditions	C_s1 =	0.0005 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0005 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0005 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0005 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0005 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0005 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0005 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0005 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0005 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0002 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0011 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0011 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0011 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0011 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0011 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0011 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0011 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0011 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.0093 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0146 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.0528 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0528 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0528 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0146 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.0528 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0528 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0528 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0007 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0011 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0011 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0011 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux			High Flow
	mass flux of surface water into SW-001	M_s1 =	1.19101 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00571 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.00425 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	1.18664 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.00817 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.77307 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00323 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.00292 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00024 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00	0.00026 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.86696 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.00963 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.00292 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00	0.00026 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00003 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	8.84375 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.04378 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.00931 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	2.34292 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.07195 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.01650 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.01490 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	4.75398 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.03708 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00552 (mg/s)
Mass balance at each node			High Flow
	mass flux in river at SW-001	M_r1 =	1.2010 (mg/s)
	mass flux in river at SW-002	M_r2 =	2.3958 (mg/s)
	mass flux in river at SW-003	M_r3 =	3.1755 (mg/s)
	mass flux in river at SW-004	M_r4 =	4.0553 (mg/s)
	mass flux in river at SW-004A	M_r4A =	12.9521 (mg/s)
	mass flux in river at SW-005	M_r5 =	15.3670 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	15.3984 (mg/s)
	mass flux into Colby Lake	M_cl =	20.1950 (mg/s)
Convert mass flux to concentration			High Flow
	concentration in river at SW-001	C_r1 =	0.00050 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00050 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00050 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00050 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00050 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00050 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00050 (mg/L)
	concentration in Colby Lake	C_cl =	0.00052 (mg/L)

Partridge River Mass-Balance--Mine Site-Proposed Action

Case Parameter	Closure Antimony		
Input concentration data	Closure		
	High Flow Conditions	C_s1 =	0.0015 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0015 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0015 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0015 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0015 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0015 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0015 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0015 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0015 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0015 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0015 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0015 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0015 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0015 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0015 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0015 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0015 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0015 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.0812 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0800 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.0800 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0800 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0800 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0004 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0800 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.0800 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0800 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0800 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0003 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0015 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0015 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0015 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux			High Flow
	mass flux of surface water into SW-001	M_s1 =	3.57302 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00764 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.04245 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	3.55991 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.01094 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	2.31922 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00432 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.02563 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00036 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00040 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	2.60087 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.01290 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.02563 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00040 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00005 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	26.53125 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.05863 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.05101 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.00189 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	7.02877 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.09636 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.04950 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.01995 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	14.26193 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.04967 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.01656 (mg/s)
Mass balance at each node			High Flow
	mass flux in river at SW-001	M_r1 =	3.6231 (mg/s)
	mass flux in river at SW-002	M_r2 =	7.1940 (mg/s)
	mass flux in river at SW-003	M_r3 =	9.5439 (mg/s)
	mass flux in river at SW-004	M_r4 =	12.1837 (mg/s)
	mass flux in river at SW-004A	M_r4A =	38.8265 (mg/s)
	mass flux in river at SW-005	M_r5 =	45.9516 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	46.0211 (mg/s)
	mass flux into Colby Lake	M_cl =	60.3492 (mg/s)
			High Flow
	concentration in river at SW-001	C_r1 =	0.00150 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00150 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00150 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00151 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00150 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00150 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00150 (mg/L)
	concentration in Colby Lake	C_cl =	0.00152 (mg/L)

Partridge River Mass-Balance--Mine Site-Proposed Action

Case Parameter	Closure Selenium		
Input concentration data	Closure		
	High Flow Conditions	C_s1 =	0.0005 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0005 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0005 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0005 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0005 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0005 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0005 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0005 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0005 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0005 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0019 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0019 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0019 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0019 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0019 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0019 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0019 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0019 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.0209 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0029 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.0029 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0029 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0029 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0019 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0029 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.0029 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0029 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0029 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0004 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0019 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0019 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0019 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M_s1 =	1.19101 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00973 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.01415 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	1.18664 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.01393 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.77307 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00550 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.00658 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.86696 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.01642 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.00658 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	8.84375 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.07466 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.00185 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.00900 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	2.34292 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.12270 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.01650 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.02540 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	4.75398 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.06324 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00552 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	1.2149 (mg/s)
	mass flux in river at SW-002	M_r2 =	2.4155 (mg/s)
	mass flux in river at SW-003	M_r3 =	3.2006 (mg/s)
	mass flux in river at SW-004	M_r4 =	4.0906 (mg/s)
	mass flux in river at SW-004A	M_r4A =	13.0199 (mg/s)
	mass flux in river at SW-005	M_r5 =	15.4855 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	15.5274 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	20.3501 (mg/s)
	High Flow		
	concentration in river at SW-001	C_r1 =	0.00050 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00050 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00050 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00051 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00050 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00051 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00051 (mg/L)
	concentration in Colby Lake	C_cl =	0.00054 (mg/L)

Partridge River Mass-Balance--Mine Site-Proposed Action

Case Parameter	Closure sulfate		
Input concentration data	Closure		
	High Flow Conditions	C_s1 =	9.0000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	9.0000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	9.0000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	9.0000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	9.0000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	9.0000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	9.0000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	9.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	9.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	22.0000 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	16.1300 (mg/L)
	concentration of ground water into SW-002	C_g2 =	16.1300 (mg/L)
	concentration of ground water into SW-003	C_g3 =	16.1300 (mg/L)
	concentration of ground water into SW-004	C_g4 =	16.1300 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	16.1300 (mg/L)
	concentration of ground water into SW-005	C_g5 =	16.1300 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	16.1300 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	16.1300 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	313.5550 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	680.6093 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	9,600.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	9,600.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	9,600.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	68.3000 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	680.6093 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	9,600.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	9,600.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	9,600.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	35.1700 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	16.1300 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	16.1300 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	16.1300 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M_s1 =	21,438.09900 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	82.16622 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	622.60000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	21,359.45311 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	117.67506 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	13,915.30190 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	46.44826 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	98.94071 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	42.83852 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00	48.00121 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00505 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	15,605.19552 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	138.69170 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	98.94071 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00	48.00121 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	6.28454 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0	0.00942 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00438 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	159,187.47800 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	630.46901 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	433.97980 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.01491 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	323.49893 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	42,172.59036 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	1,036.20733 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	296.98159 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	214.54513 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	85,571.55900 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	534.08043 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	99.33300 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	22,142.8652 (mg/s)
	mass flux in river at SW-002	M_r2 =	43,619.9934 (mg/s)
	mass flux in river at SW-003	M_r3 =	57,771.5290 (mg/s)
	mass flux in river at SW-004	M_r4 =	73,668.6616 (mg/s)
	mass flux in river at SW-004A	M_r4A =	234,244.1022 (mg/s)
	mass flux in river at SW-005	M_r5 =	277,452.8999 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	277,964.4266 (mg/s)
	mass flux into Colby Lake	M_cl =	364,169.3991 (mg/s)
	High Flow		
	concentration in river at SW-001	C_r1 =	9.16735 (mg/L)
	concentration in river at SW-002	C_r2 =	9.09513 (mg/L)
	concentration in river at SW-003	C_r3 =	9.10459 (mg/L)
	concentration in river at SW-004	C_r4 =	9.10822 (mg/L)
	concentration in river at SW-004A	C_r4A =	9.07216 (mg/L)
	concentration in river at SW-005	C_r5 =	9.07593 (mg/L)
	concentration in river at USGS Gage	C_r6 =	9.07891 (mg/L)
	concentration in Colby Lake	C_cl =	9.42428 (mg/L)

Partridge River Mass-Balance--Mine Site-Proposed Action

Case Parameter	Closure Thallium		
Input concentration data	Closure		
	High Flow Conditions	C_s1 =	0.0004 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0004 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0004 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0004 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0004 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0004 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0004 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0004 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0004 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0003 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0000 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0000 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0000 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0000 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0000 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0000 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0000 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0000 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.0007 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0000 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.0001 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0001 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0001 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0000 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.0001 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0001 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0001 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0000 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0000 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0000 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0000 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M_s1 =	0.95280 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00002 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.00809 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	0.94931 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.00003 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.61846 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00001 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.00021 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.69356 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.00003 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.00021 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	7.07500 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.00016 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	1.87434 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.00026 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.01320 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.00005 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	3.80318 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.00013 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00441 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	0.9609 (mg/s)
	mass flux in river at SW-002	M_r2 =	1.9103 (mg/s)
	mass flux in river at SW-003	M_r3 =	2.5289 (mg/s)
	mass flux in river at SW-004	M_r4 =	3.2227 (mg/s)
	mass flux in river at SW-004A	M_r4A =	10.2979 (mg/s)
	mass flux in river at SW-005	M_r5 =	12.1725 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	12.1858 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	15.9935 (mg/s)
	High Flow		
	concentration in river at SW-001	C_r1 =	0.00040 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00040 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00040 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00040 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00040 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00040 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00040 (mg/L)
	concentration in Colby Lake	C_cl =	0.00039 (mg/L)

Partridge River Mass-Balance--Mine Site-Proposed Action

Case Parameter	Closure Vanadium		
Input concentration data	Closure		
	High Flow Conditions	C_s1 =	0.0009 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0009 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0009 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0009 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0009 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0009 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0009 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0009 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0009 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0043 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0043 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0043 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0043 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0043 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0043 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0043 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0043 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0043 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.1001 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.4508 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	6.8930 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	8.6360 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.4179 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0014 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.4508 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	6.8930 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	8.6360 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.4179 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0017 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0043 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0043 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0043 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M_s1 =	2.14381 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.02190 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.12169 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	2.13595 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.03137 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	1.39153 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.01238 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.03157 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.03076 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.04318 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	1.56052 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.03697 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.03157 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.04318 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00027 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	15.91875 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.16807 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.28743 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.00663 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	4.21726 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.27624 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.02970 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.05719 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	8.55716 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.14238 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00993 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	2.2874 (mg/s)
	mass flux in river at SW-002	M_r2 =	4.4547 (mg/s)
	mass flux in river at SW-003	M_r3 =	5.9641 (mg/s)
	mass flux in river at SW-004	M_r4 =	7.6367 (mg/s)
	mass flux in river at SW-004A	M_r4A =	24.0176 (mg/s)
	mass flux in river at SW-005	M_r5 =	28.5111 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	28.5980 (mg/s)
	mass flux into Colby Lake	M_cl =	37.3074 (mg/s)
	High Flow		
	concentration in river at SW-001	C_r1 =	0.00095 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00093 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00094 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00094 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00093 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00093 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00093 (mg/L)
	concentration in Colby Lake	C_cl =	0.00110 (mg/L)



Partridge River Mass-Balance--Mine Site-Proposed Action

Case Parameter	Closure Zinc		
Input concentration data	Closure		
	High Flow Conditions	C_s1 =	0.0160 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0160 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0160 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0160 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0160 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0160 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0160 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0160 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0620 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0073 (mg/L)
	concentration of West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0275 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0275 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0275 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0275 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0275 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0275 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0275 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0275 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.1591 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0900 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	26.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	26.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	26.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0030 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0900 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	26.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	26.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	26.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0046 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0275 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0275 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0275 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M_s1 =	38.11218 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.14009 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.20744 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	37.97236 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.20062 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	24.73831 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.07919 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.05019 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.11602 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00	0.13000 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003	0.00001 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	27.74257 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.23646 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.05019 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00	0.13000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.01702 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0	0.00003 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00001 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	282.99996 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	1.07489 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.05739 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.01421 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	74.97349 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	1.76663 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.52797 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.36578 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	152.12722 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.91055 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.68429 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	38.4597 (mg/s)
	mass flux in river at SW-002	M_r2 =	76.6327 (mg/s)
	mass flux in river at SW-003	M_r3 =	101.7464 (mg/s)
	mass flux in river at SW-004	M_r4 =	129.9227 (mg/s)
	mass flux in river at SW-004A	M_r4A =	414.9691 (mg/s)
	mass flux in river at SW-005	M_r5 =	490.8093 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	491.7030 (mg/s)
	mass flux into Colby Lake	M_cl =	645.4251 (mg/s)
	High Flow		
	concentration in river at SW-001	C_r1 =	0.01592 (mg/L)
	concentration in river at SW-002	C_r2 =	0.01598 (mg/L)
	concentration in river at SW-003	C_r3 =	0.01603 (mg/L)
	concentration in river at SW-004	C_r4 =	0.01606 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.01604 (mg/L)
	concentration in river at SW-005	C_r5 =	0.01606 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.01606 (mg/L)
	concentration in Colby Lake	C_cl =	0.01647 (mg/L)

***Appendix H.7***  
***Partridge River***  
***Proposed Action***  
***Post-Closure***

## Partridge River Mass-Balance Model - Mine Site - Proposed Action

### FLOWS

Case Flows	Post-Closure Low Flow Conditions (no surface runoff)			
Total flow in Partridge River	flow in river at SW-001	Q_r1_L =	1.18	(cfs)
	flow in river at SW-002	Q_r2_L =	1.45	(cfs)
	flow in river at SW-003	Q_r3_L =	1.57	(cfs)
	flow in river at SW-004	Q_r4_L =	1.93	(cfs)
	flow in river at SW-004A	Q_r4a_L =	3.45	(cfs)
	flow in river at SW-005	Q_r5_L =	5.72	(cfs)
	flow in river at USGS Gage	Q_r6_L =	6.19	(cfs)
	total flow into Colby Lake	Q_cl_L =	7.75	(cfs)
	flow check	Q_ck_L =	7.75	(cfs)
Input flow data	surface water flow into SW-001	Q_s1_L =	-	(cfs)
	surface water flow into SW-002	Q_s2_L =	-	(cfs)
	surface water flow into SW-003	Q_s3_L =	-	(cfs)
	surface water flow into SW-004	Q_s4_L =	-	(cfs)
	surface water flow into SW-004A	Q_s4a_L =	-	(cfs)
	surface water flow into SW-005	Q_s5_L =	-	(cfs)
	surface water flow into USGS Gage	Q_s6_L =	-	(cfs)
	surface water flow into Colby Lake	Q_scl_L =	-	(cfs)
	surface water inflow from Hoyt Lakes WWTP	Q_shl_L =	0.39	(cfs)
	surface water inflow from discharges upstream of PM-1	Q_sns_L =	1.00	(cfs)
	West Pit overflow	Q_sms_L =	0.08	(cfs)
	ground water flow into SW-001	Q_g1_L =	0.18	(cfs)
	ground water flow into SW-002	Q_g2_L =	0.27	(cfs)
	ground water flow into SW-003	Q_g3_L =	0.11	(cfs)
	ground water flow into SW-004	Q_g4_L =	0.31	(cfs)
	ground water flow into SW-004A	Q_g4a_L =	1.39	(cfs)
	ground water flow into SW-005	Q_g5_L =	2.27	(cfs)
	ground water flow into USGS Gage	Q_g6_L =	0.47	(cfs)
	ground water flow into Colby Lake	Q_gcl_L =	1.17	(cfs)
	ground water seepage from East Pit to SW-003	Q_gep_003_L =	0.0112	(cfs)
	ground water seepage from East Pit to SW-004	Q_gep_004_L =	0.0112	(cfs)
	ground water seepage from West Pit	Q_gwp_L =	0.0401	(cfs)
	ground water liner leakage from Cat 1/2 stockpile	Q_gC12_L =	0.0061	(cfs)
	ground water liner leakage from Cat 3 stockpile to SW-003	Q_gC3_003_L =	0.0000	(cfs)
	ground water liner leakage from Cat 3 stockpile to SW-004	Q_gC3_004_L =	-	(cfs)
	ground water liner leakage from Cat 3LO stockpile to SW-003	Q_gC3LO_003_L =	0.0000	(cfs)
	ground water liner leakage from Cat 3LO stockpile to SW-004	Q_gC3LO_004_L =	0.0000	(cfs)
	ground water liner leakage from Cat 4 stockpile	Q_gC4_L =	0.0000	(cfs)
	ground water liner leakage from LO SP	Q_gC4LO_L =	-	(cfs)
	ground water seepage from Overburden Storage	Q_gOS_L =	-	(cfs)
	ground water seepage from Overburden (Cat 1/2)	Q_gO12_L =	0.0457	(cfs)
	ground water liner leakage from Cat 1/2 sumps	Q_gC12s_L =	0.0000	(cfs)
	ground water liner leakage from Cat 3 sumps	Q_gC3s_L =	0.0000	(cfs)
	ground water liner leakage from Cat 3LO sumps	Q_gC3LOs_L =	0.0000	(cfs)
	ground water liner leakage from Cat 4 sumps	Q_gC4s_L =	0.0000	(cfs)
	ground water liner leakage from LO SP sumps	Q_gC4LOs_L =	-	(cfs)
	ground water seepage from Overburden pond - PW1	Q_gOp1_L =	-	(cfs)
	ground water seepage from Overburden pond - PW7	Q_gOp7_L =	-	(cfs)
	ground water leakage from Haul Road pond - PW2	Q_gHRp2_L =	-	(cfs)
	ground water leakage from Haul Road pond - PW4	Q_gHRp4_L =	-	(cfs)
	ground water leakage from RTH pond - PW3	Q_gRTHp_L =	-	(cfs)
	ground water liner leakage from WWTF pond	Q_gWTFp_L =	-	(cfs)

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case Parameter	Post-Closure Silver		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0001 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0001 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0001 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0001 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0001 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0001 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0001 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0001 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0001 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0001 (mg/L)
	concentration of West Pit overflow	C sms =	0.0010 (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0006 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0006 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0006 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0006 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0006 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0006 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0006 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0006 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	0.0003 (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	0.0010 (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	0.0007 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	0.0007 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0007 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0007 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	0.0007 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C gC3s =	0.0007 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.0007 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0007 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	- (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0006 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0006 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0006 (mg/L)
	concentration of liner leakage from WWTP pond	C gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M s1 =	- (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.00280 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.00340 (mg/s)
	mass flux of surface water into SW-002	M s2 =	- (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.00416 (mg/s)
	mass flux of surface water into SW-003	M s3 =	- (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.00166 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep 003 =	0.00008 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M gC3 003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO 003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M gC3s 003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	- (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.00486 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep 004 =	0.00008 (mg/s)
	mass flux of seepage from West Pit	M gwp =	0.00114 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M gC3 004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO 004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs 004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTP pond	M gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.02157 (mg/s)
	mass flux of West Pit overflow	M sms =	0.00238 (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M gC12 =	0.00012 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	- (mg/s)
	mass flux of ground water into SW-005	M g5 =	0.03533 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.00732 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	0.01821 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.00110 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M r1 =	0.0062 (mg/s)
	mass flux in river at SW-002	M r2 =	0.0104 (mg/s)
	mass flux in river at SW-003	M r3 =	0.0121 (mg/s)
	mass flux in river at SW-004	M r4 =	0.0182 (mg/s)
	mass flux in river at SW-004A	M r4A =	0.0423 (mg/s)
	mass flux in river at SW-005	M r5 =	0.0776 (mg/s)
	mass flux in river at USGS Gage	M r6 =	0.0849 (mg/s)
	mass flux into Colby Lake	M cl =	0.1042 (mg/s)
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C r1 =	0.00019 (mg/L)
	concentration in river at SW-002	C r2 =	0.00025 (mg/L)
	concentration in river at SW-003	C r3 =	0.00027 (mg/L)
	concentration in river at SW-004	C r4 =	0.00033 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00043 (mg/L)
	concentration in river at SW-005	C r5 =	0.00048 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00048 (mg/L)
	concentration in Colby Lake	C cl =	0.00017 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case Parameter	Post-Closure Aluminum		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0700 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0700 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0700 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0700 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0700 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0700 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0700 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0700 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0700 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0173 (mg/L)
	concentration of West Pit overflow	C_sms =	0.0186 (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.1250 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.1250 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.1250 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.1250 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.1250 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.1250 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.1250 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.1250 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.7230 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	0.0186 (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	1.6800 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	83.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	83.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	83.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.1400 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	1.6800 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	83.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	83.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	83.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.4106 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.1250 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.1250 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.1250 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Low Flow			
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.63675 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.48959 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.94651 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.37689 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.22813 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.03472 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00726 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00004 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	1.10403 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.22813 (mg/s)
	mass flux of ground water into SW-004	M_gwp =	0.02109 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00726 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00069 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00008 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00004 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	4.90183 (mg/s)
	mass flux of West Pit overflow	M_sms =	0.04414 (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.29239 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00004 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.18099 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	8.03013 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	1.66263 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	4.13888 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.77259 (mg/s)
Low Flow			
Mass balance at each node	mass flux in river at SW-001	M_r1 =	1.1263 (mg/s)
	mass flux in river at SW-002	M_r2 =	2.0729 (mg/s)
	mass flux in river at SW-003	M_r3 =	2.7198 (mg/s)
	mass flux in river at SW-004	M_r4 =	4.0813 (mg/s)
	mass flux in river at SW-004A	M_r4A =	9.5007 (mg/s)
	mass flux in river at SW-005	M_r5 =	17.5308 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	19.1934 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	24.1049 (mg/s)
	concentration in river at SW-001	C_r1 =	0.03373 (mg/L)
	concentration in river at SW-002	C_r2 =	0.05060 (mg/L)
	concentration in river at SW-003	C_r3 =	0.06140 (mg/L)
	concentration in river at SW-004	C_r4 =	0.07477 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.09730 (mg/L)
	concentration in river at SW-005	C_r5 =	0.10829 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.10956 (mg/L)
	concentration in Colby Lake	C_cl =	0.07483 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case Parameter	Post-Closure Arsenic		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0021 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0021 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0021 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0021 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0021 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0021 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0021 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0021 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0021 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0065 (mg/L)
	concentration of West Pit overflow	C sms =	0.0972 (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0022 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0022 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0022 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0022 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0022 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0022 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0022 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0022 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	0.0236 (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	0.0972 (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	0.7100 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	0.7100 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.7100 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.7100 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	0.0027 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	0.7100 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C gC3s =	0.7100 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.7100 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.7100 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0016 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0022 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0022 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0022 (mg/L)
	concentration of liner leakage from WWTF pond	C gWTFp =	#N/A (mg/L)
Low Flow			
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	(mg/s)
	mass flux of ground water into SW-001	M g1 =	0.01100 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.18395 (mg/s)
	mass flux of surface water into SW-002	M s2 =	(mg/s)
	mass flux of ground water into SW-002	M g2 =	0.01636 (mg/s)
	mass flux of surface water into SW-003	M s3 =	(mg/s)
	mass flux of ground water into SW-003	M g3 =	0.00651 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	0.00753 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M gC3_003 =	0.00030 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_00 =	0.00006 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	(mg/s)
	mass flux of ground water into SW-004	M g4 =	0.01908 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	0.00753 (mg/s)
	mass flux of seepage from West Pit	M gwp =	0.11039 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M gC3_004 =	(mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_00 =	0.00006 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00001 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_0 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.08470 (mg/s)
	mass flux of West Pit overflow	M sms =	0.23101 (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M gC12 =	0.12357 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M gC12s =	0.00002 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M gO12 =	0.00349 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	- (mg/s)
	mass flux of ground water into SW-005	M g5 =	0.13876 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.02873 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	0.07152 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.02329 (mg/s)
Low Flow			
Mass balance at each node	mass flux in river at SW-001	M r1 =	0.1950 (mg/s)
	mass flux in river at SW-002	M r2 =	0.2113 (mg/s)
	mass flux in river at SW-003	M r3 =	0.2257 (mg/s)
	mass flux in river at SW-004	M r4 =	0.3628 (mg/s)
	mass flux in river at SW-004A	M r4A =	0.8056 (mg/s)
	mass flux in river at SW-005	M r5 =	0.9443 (mg/s)
	mass flux in river at USGS Gage	M r6 =	0.9731 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M cl =	1.0679 (mg/s)
Low Flow			
Convert mass flux to concentration	concentration in river at SW-001	C r1 =	0.00584 (mg/L)
	concentration in river at SW-002	C r2 =	0.00516 (mg/L)
	concentration in river at SW-003	C r3 =	0.00510 (mg/L)
	concentration in river at SW-004	C r4 =	0.00665 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00825 (mg/L)
	concentration in river at SW-005	C r5 =	0.00583 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00555 (mg/L)
	concentration in Colby Lake	C cl =	0.00423 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case Parameter	Post-Closure Boron		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0450 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0450 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0450 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0450 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0450 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0450 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0450 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0450 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0450 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0960 (mg/L)
	concentration of West Pit overflow	C sms =	0.2558 (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0870 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0870 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0870 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0870 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0870 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0870 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0870 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0870 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	0.2141 (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	0.2558 (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	0.7600 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	0.7600 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.7600 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.7600 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	0.0370 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	0.7600 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C gC3s =	0.7600 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.7600 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.7600 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0622 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0870 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0870 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0870 (mg/L)
	concentration of liner leakage from WWTF pond	C gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M s1 =	- (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.44318 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	2.71680 (mg/s)
	mass flux of surface water into SW-002	M s2 =	- (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.65877 (mg/s)
	mass flux of surface water into SW-003	M s3 =	- (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.26232 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	0.06757 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M gC3_003 =	0.00032 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00007 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	- (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.76841 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	0.06757 (mg/s)
	mass flux of seepage from West Pit	M gwp =	0.29060 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00007 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00001 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M g4A =	3.41167 (mg/s)
	mass flux of West Pit overflow	M sms =	0.60813 (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M gC12 =	0.13227 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M gC12s =	0.00002 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M gO12 =	0.04783 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	- (mg/s)
	mass flux of ground water into SW-005	M g5 =	5.58897 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	1.15719 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	2.88066 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.49667 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M r1 =	3.1600 (mg/s)
	mass flux in river at SW-002	M r2 =	3.6188 (mg/s)
	mass flux in river at SW-003	M r3 =	4.1490 (mg/s)
	mass flux in river at SW-004	M r4 =	5.2757 (mg/s)
	mass flux in river at SW-004A	M r4A =	9.4756 (mg/s)
	mass flux in river at SW-005	M r5 =	15.0646 (mg/s)
	mass flux in river at USGS Gage	M r6 =	16.2218 (mg/s)
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C r1 =	0.09463 (mg/L)
	concentration in river at SW-002	C r2 =	0.09322 (mg/L)
	concentration in river at SW-003	C r3 =	0.09366 (mg/L)
	concentration in river at SW-004	C r4 =	0.09666 (mg/L)
	concentration in river at SW-004A	C r4A =	0.09705 (mg/L)
	concentration in river at SW-005	C r5 =	0.09306 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.09260 (mg/L)
	concentration in Colby Lake	C cl =	0.05522 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case Parameter	Post-Closure Barium		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0077 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0077 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0077 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0077 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0077 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0077 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0077 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0077 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shi =	0.0077 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0050 (mg/L)
	concentration of West Pit overflow	C sms =	0.0948 (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0219 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0219 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0219 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0219 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0219 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0219 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0219 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0219 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	0.0364 (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	0.0948 (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	0.1900 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	0.1900 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.1900 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.1900 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	0.0140 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	0.1900 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C gC3s =	0.1900 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.1900 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.1900 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0168 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0219 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0219 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0219 (mg/L)
	concentration of liner leakage from WWTF pond	C gWTFp =	#N/A (mg/L)

			Low Flow
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	- (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.11166 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.14150 (mg/s)
	mass flux of surface water into SW-002	M s2 =	- (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.16598 (mg/s)
	mass flux of surface water into SW-003	M s3 =	- (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.06609 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	0.01150 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M gC3_003 =	0.00008 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_00 =	0.00002 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	- (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.19360 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	0.01150 (mg/s)
	mass flux of seepage from West Pit	M gwp =	0.10764 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_00 =	0.00002 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_0 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.85959 (mg/s)
	mass flux of West Pit overflow	M sms =	0.22526 (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M gC12 =	0.03307 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M gO12 =	0.01810 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	- (mg/s)
	mass flux of ground water into SW-005	M g5 =	1.40816 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.29156 (mg/s)
mass flux of surface water into Colby Lake	M scl =	- (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	0.72579 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shi =	0.08476 (mg/s)	

			Low Flow
Mass balance at each node	mass flux in river at SW-001	M r1 =	0.2532 (mg/s)
	mass flux in river at SW-002	M r2 =	0.4191 (mg/s)
	mass flux in river at SW-003	M r3 =	0.4968 (mg/s)
	mass flux in river at SW-004	M r4 =	0.8096 (mg/s)
	mass flux in river at SW-004A	M r4A =	1.9456 (mg/s)
	mass flux in river at SW-005	M r5 =	3.3538 (mg/s)
	mass flux in river at USGS Gage	M r6 =	3.6453 (mg/s)
	mass flux into Colby Lake	M cl =	4.4559 (mg/s)

			Low Flow
Convert mass flux to concentration	concentration in river at SW-001	C r1 =	0.00758 (mg/L)
	concentration in river at SW-002	C r2 =	0.01023 (mg/L)
	concentration in river at SW-003	C r3 =	0.01122 (mg/L)
	concentration in river at SW-004	C r4 =	0.01483 (mg/L)
	concentration in river at SW-004A	C r4A =	0.01993 (mg/L)
	concentration in river at SW-005	C r5 =	0.02072 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.02081 (mg/L)
	concentration in Colby Lake	C cl =	0.01108 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case Parameter	Post-Closure Beryllium		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0001 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0001 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0001 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0001 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0001 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0001 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0001 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0001 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0001 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0001 (mg/L)
	concentration of West Pit overflow	C sms =	0.0008 (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0001 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0001 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0001 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0001 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0001 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0001 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0001 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0001 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	0.0001 (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	0.0008 (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	0.0023 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0023 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0023 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C gC3s =	0.0023 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.0023 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0023 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	- (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0001 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0001 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0001 (mg/L)
	concentration of liner leakage from WWTF pond	C gWTFp =	#N/A (mg/L)

			Low Flow	
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	-	(mg/s)
	mass flux of ground water into SW-001	M g1 =	0.00074	(mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.00283	(mg/s)
	mass flux of surface water into SW-002	M s2 =	-	(mg/s)
	mass flux of ground water into SW-002	M g2 =	0.00110	(mg/s)
	mass flux of surface water into SW-003	M s3 =	-	(mg/s)
	mass flux of ground water into SW-003	M g3 =	0.00044	(mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	0.00005	(mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M gC3_003 =	0.00000	(mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00000	(mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M gC3s_003 =	0.00000	(mg/s)
	mass flux of surface water into SW-004	M s4 =	-	(mg/s)
	mass flux of ground water into SW-004	M g4 =	0.00128	(mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	0.00005	(mg/s)
	mass flux of seepage from West Pit	M gwp =	0.00091	(mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M gC3_004 =	-	(mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00000	(mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00000	(mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	#N/A	(mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	#N/A	(mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000	(mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000	(mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	#N/A	(mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	-	(mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	-	(mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	-	(mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	-	(mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	#N/A	(mg/s)
	mass flux of surface water into SW-004A	M s4A =	-	(mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.00569	(mg/s)
	mass flux of West Pit overflow	M sms =	0.00190	(mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M gC12 =	0.00003	(mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M gC12s =	0.00000	(mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M gO12 =	-	(mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A	(mg/s)
	mass flux of surface water into SW-005	M s5 =	-	(mg/s)
	mass flux of ground water into SW-005	M g5 =	0.00931	(mg/s)
	mass flux of surface water into USGS Gage	M s6 =	-	(mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.00193	(mg/s)
	mass flux of surface water into Colby Lake	M scl =	-	(mg/s)
	mass flux of ground water into Colby Lake	M gcl =	0.00480	(mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.00110	(mg/s)

			Low Flow	
Mass balance at each node	mass flux in river at SW-001	M r1 =	0.0036	(mg/s)
	mass flux in river at SW-002	M r2 =	0.0047	(mg/s)
	mass flux in river at SW-003	M r3 =	0.0052	(mg/s)
	mass flux in river at SW-004	M r4 =	0.0074	(mg/s)
	mass flux in river at SW-004A	M r4A =	0.0150	(mg/s)
	mass flux in river at SW-005	M r5 =	0.0243	(mg/s)
	mass flux in river at USGS Gage	M r6 =	0.0262	(mg/s)
	mass flux into Colby Lake	M cl =	0.0322	(mg/s)

			Low Flow	
Convert mass flux to concentration	concentration in river at SW-001	C r1 =	0.00011	(mg/L)
	concentration in river at SW-002	C r2 =	0.00011	(mg/L)
	concentration in river at SW-003	C r3 =	0.00012	(mg/L)
	concentration in river at SW-004	C r4 =	0.00014	(mg/L)
	concentration in river at SW-004A	C r4A =	0.00015	(mg/L)
	concentration in river at SW-005	C r5 =	0.00015	(mg/L)
	concentration in river at USGS Gage	C r6 =	0.00015	(mg/L)
		concentration in Colby Lake	C cl =	0.00012

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case Parameter	Post-Closure Calcium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	17.0000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	17.0000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	17.0000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	17.0000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	17.0000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	17.0000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	17.0000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	17.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	17.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	24.5000 (mg/L)
	concentration of West Pit overflow	C_sms =	94.2398 (mg/L)
	concentration of ground water into SW-001	C_g1 =	14.7900 (mg/L)
	concentration of ground water into SW-002	C_g2 =	14.7900 (mg/L)
	concentration of ground water into SW-003	C_g3 =	14.7900 (mg/L)
	concentration of ground water into SW-004	C_g4 =	14.7900 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	14.7900 (mg/L)
	concentration of ground water into SW-005	C_g5 =	14.7900 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	14.7900 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	14.7900 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	89.1824 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	94.2398 (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	540.0000 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	480.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	480.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	480.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	15.8000 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	540.0000 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	480.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	480.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	480.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	9.3700 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	14.7900 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	14.7900 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	14.7900 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	75.34026 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	693.35000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	111.99140 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	44.59378 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	28.14105 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.20077 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00	0.04200 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00025 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	130.62927 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	28.14105 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	107.05281 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00	0.04200 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00397 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0	0.00047 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00022 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	579.98463 (mg/s)
	mass flux of West Pit overflow	M_sms =	224.02681 (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	93.98106 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.01183 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	20.42604 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	950.12439 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	196.72179 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	489.71169 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	187.62900 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	768.6903 (mg/s)
	mass flux in river at SW-002	M_r2 =	880.6817 (mg/s)
	mass flux in river at SW-003	M_r3 =	953.6595 (mg/s)
	mass flux in river at SW-004	M_r4 =	1,219.5296 (mg/s)
	mass flux in river at SW-004A	M_r4A =	2,137.9599 (mg/s)
	mass flux in river at SW-005	M_r5 =	3,088.0843 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	3,284.8061 (mg/s)
	mass flux into Colby Lake	M_cl =	3,962.1468 (mg/s)
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C_r1 =	23.01881 (mg/L)
	concentration in river at SW-002	C_r2 =	21.49781 (mg/L)
	concentration in river at SW-003	C_r3 =	21.52862 (mg/L)
	concentration in river at SW-004	C_r4 =	22.34342 (mg/L)
	concentration in river at SW-004A	C_r4A =	21.89639 (mg/L)
	concentration in river at SW-005	C_r5 =	19.07628 (mg/L)
	concentration in river at USGS Gage	C_r6 =	18.75084 (mg/L)
	concentration in Colby Lake	C_cl =	18.55607 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case Parameter	Post-Closure Cadmium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0001 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0001 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0001 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0001 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0001 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0001 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0001 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0001 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0001 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0001 (mg/L)
	concentration of West Pit overflow	C_sms =	0.0001 (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0001 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0001 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0001 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0001 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0001 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0001 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0001 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0001 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.0001 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	0.0001 (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.0149 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0149 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0149 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.0149 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0149 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0149 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0001 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0001 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0001 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0001 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00051 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.00283 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.00076 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00030 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.00003 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.00088 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.00003 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	0.00014 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.00392 (mg/s)
	mass flux of West Pit overflow	M_sms =	0.00028 (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.00003 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.00642 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.00133 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.00331 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00110 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	0.0033 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.0041 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.0044 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.0055 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.0097 (mg/s)
	mass flux in river at SW-005	M_r5 =	0.0162 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	0.0175 (mg/s)
	mass flux into Colby Lake	M_cl =	0.0219 (mg/s)
	Low Flow		
	concentration in river at SW-001	C_r1 =	0.00010 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00010 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00010 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00010 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00010 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00010 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00010 (mg/L)
	concentration in Colby Lake	C_cl =	0.00010 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case Parameter	Post-Closure Chloride		
Input concentration data	concentration of surface water into SW-001	C_s1 =	8.0000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	8.0000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	8.0000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	8.0000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	8.0000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	8.0000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	8.0000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	8.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	8.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	1.6000 (mg/L)
	concentration of West Pit overflow	C_sms =	13.4684 (mg/L)
	concentration of ground water into SW-001	C_g1 =	6.6000 (mg/L)
	concentration of ground water into SW-002	C_g2 =	6.6000 (mg/L)
	concentration of ground water into SW-003	C_g3 =	6.6000 (mg/L)
	concentration of ground water into SW-004	C_g4 =	6.6000 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	6.6000 (mg/L)
	concentration of ground water into SW-005	C_g5 =	6.6000 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	6.6000 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	6.6000 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	50.7997 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	13.4684 (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	- (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	- (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	- (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	- (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	2.3300 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	- (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	- (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	- (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	- (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	5.3500 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	6.6000 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	6.6000 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	6.6000 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Low Flow			
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	33.62040 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	45.28000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	49.97588 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	19.89986 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	16.02961 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	- (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	- (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	58.29298 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	16.02961 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	15.29963 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	- (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	- (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	- (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	- (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	258.81667 (mg/s)
	mass flux of West Pit overflow	M_sms =	32.01716 (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	- (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	3.01219 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	423.99060 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	87.78660 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	218.53260 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	88.29600 (mg/s)
Low Flow			
Mass balance at each node	mass flux in river at SW-001	M_r1 =	78.9004 (mg/s)
	mass flux in river at SW-002	M_r2 =	128.8763 (mg/s)
	mass flux in river at SW-003	M_r3 =	164.8057 (mg/s)
	mass flux in river at SW-004	M_r4 =	254.4280 (mg/s)
	mass flux in river at SW-004A	M_r4A =	548.2740 (mg/s)
	mass flux in river at SW-005	M_r5 =	972.2646 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	1,060.0512 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	1,366.8798 (mg/s)
	concentration in river at SW-001	C_r1 =	2.36271 (mg/L)
	concentration in river at SW-002	C_r2 =	3.14592 (mg/L)
	concentration in river at SW-003	C_r3 =	3.72045 (mg/L)
	concentration in river at SW-004	C_r4 =	4.66146 (mg/L)
	concentration in river at SW-004A	C_r4A =	5.61527 (mg/L)
	concentration in river at SW-005	C_r5 =	6.00605 (mg/L)
	concentration in river at USGS Gage	C_r6 =	6.05115 (mg/L)
	concentration in Colby Lake	C_cl =	7.84362 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case Parameter	Post-Closure Cobalt		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0005 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0005 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0005 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0005 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0005 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0005 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0005 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0005 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0005 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0005 (mg/L)
	concentration of West Pit overflow	C sms =	0.0080 (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0017 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0017 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0017 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0017 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0017 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0017 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0017 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0017 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	0.0018 (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	0.0080 (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	0.0520 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	44.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	44.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	44.0000 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	0.0013 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	0.0520 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C gC3s =	44.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	44.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	44.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0011 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0017 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0017 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0017 (mg/L)
	concentration of liner leakage from WWTF pond	C gWTFp =	#N/A (mg/L)
Low Flow			
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	- (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.00841 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.01415 (mg/s)
	mass flux of surface water into SW-002	M s2 =	- (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.01249 (mg/s)
	mass flux of surface water into SW-003	M s3 =	- (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.00497 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	0.00056 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M gC3_003 =	0.01840 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_00 =	0.00385 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M gC3s_003 =	0.00002 (mg/s)
	mass flux of surface water into SW-004	M s4 =	- (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.01457 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	0.00056 (mg/s)
	mass flux of ground water into SW-004	M gwp =	0.00905 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_00 =	0.00385 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00036 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_0 =	0.00004 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00002 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.06470 (mg/s)
	mass flux of West Pit overflow	M sms =	0.01893 (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M gC12 =	0.00905 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M gO12 =	0.00168 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	- (mg/s)
	mass flux of ground water into SW-005	M g5 =	0.10600 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.02195 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	0.05463 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.00552 (mg/s)
Low Flow			
Mass balance at each node	mass flux in river at SW-001	M r1 =	0.0226 (mg/s)
	mass flux in river at SW-002	M r2 =	0.0350 (mg/s)
	mass flux in river at SW-003	M r3 =	0.0629 (mg/s)
	mass flux in river at SW-004	M r4 =	0.0913 (mg/s)
	mass flux in river at SW-004A	M r4A =	0.1857 (mg/s)
	mass flux in river at SW-005	M r5 =	0.2917 (mg/s)
	mass flux in river at USGS Gage	M r6 =	0.3136 (mg/s)
mass flux into Colby Lake	M cl =	0.3738 (mg/s)	
Low Flow			
Convert mass flux to concentration	concentration in river at SW-001	C r1 =	0.00068 (mg/L)
	concentration in river at SW-002	C r2 =	0.00086 (mg/L)
	concentration in river at SW-003	C r3 =	0.00142 (mg/L)
	concentration in river at SW-004	C r4 =	0.00167 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00190 (mg/L)
	concentration in river at SW-005	C r5 =	0.00180 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00179 (mg/L)
	concentration in Colby Lake	C cl =	0.00081 (mg/L)

**Partridge River Mass-Balance Model - Mine Site - Proposed Action**

Case Parameter	Post-Closure Copper		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0017 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0017 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0017 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0017 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0017 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0017 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0017 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0017 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0190 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0012 (mg/L)
	concentration of West Pit overflow	C_sms =	0.0060 (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0030 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0030 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0030 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0030 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0030 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0030 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0030 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0030 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.0651 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	0.0060 (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0920 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	202.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	202.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	202.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0170 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0920 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	202.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	202.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	202.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0214 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0030 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0030 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0030 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.01503 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.03509 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.02234 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00889 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.02056 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.08449 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.01767 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00011 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.02606 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.02056 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	0.00682 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.01767 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00167 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00020 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00009 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.11568 (mg/s)
	mass flux of West Pit overflow	M_sms =	0.01426 (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.01601 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.02198 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.18951 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.03924 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.09768 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.20970 (mg/s)
Mass balance at each node			<b>Low Flow</b>
	mass flux in river at SW-001	M_r1 =	0.0501 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.0725 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.2042 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.2773 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.4453 (mg/s)
	mass flux in river at SW-005	M_r5 =	0.6348 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	0.6740 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	0.9814 (mg/s)
			<b>Low Flow</b>
	concentration in river at SW-001	C_r1 =	0.00150 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00177 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00461 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00508 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00456 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00392 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00385 (mg/L)
	concentration in Colby Lake	C_cl =	0.00218 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case Parameter	Post-Closure Fluoride		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0700 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0700 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0700 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0700 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0700 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0700 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0700 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0700 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0700 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.1400 (mg/L)
	concentration of West Pit overflow	C_sms =	1.3178 (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.2800 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.2800 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.2800 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.2800 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.2800 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.2800 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.2800 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.2800 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	6.3956 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	1.3178 (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0621 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.0622 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0622 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0622 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.4200 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0621 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.0622 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0622 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0622 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.2239 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.2800 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.2800 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.2800 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Low Flow			
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	1.42632 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	3.96200 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	2.12019 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.84424 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	2.01810 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00003 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	2.47304 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	2.01810 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	1.49699 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	10.98010 (mg/s)
	mass flux of West Pit overflow	M_sms =	3.13271 (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.01081 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.54297 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	17.98748 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	3.72428 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	9.27108 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.77259 (mg/s)
Low Flow			
Mass balance at each node	mass flux in river at SW-001	M_r1 =	5.3883 (mg/s)
	mass flux in river at SW-002	M_r2 =	7.5085 (mg/s)
	mass flux in river at SW-003	M_r3 =	10.3709 (mg/s)
	mass flux in river at SW-004	M_r4 =	16.3590 (mg/s)
	mass flux in river at SW-004A	M_r4A =	31.0256 (mg/s)
	mass flux in river at SW-005	M_r5 =	49.0131 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	52.7374 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	62.7810 (mg/s)
	concentration in river at SW-001	C_r1 =	0.16136 (mg/L)
	concentration in river at SW-002	C_r2 =	0.18329 (mg/L)
	concentration in river at SW-003	C_r3 =	0.23412 (mg/L)
	concentration in river at SW-004	C_r4 =	0.29972 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.31776 (mg/L)
	concentration in river at SW-005	C_r5 =	0.30277 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.30104 (mg/L)
	concentration in Colby Lake	C_cl =	0.12389 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case Parameter	Post-Closure Iron		
Input concentration data	concentration of surface water into SW-001	C_s1 =	1.6000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	1.6000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	1.6000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	1.6000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	1.6000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	1.6000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	1.6000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	1.6000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	1.6000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0300 (mg/L)
	concentration of West Pit overflow	C_sms =	0.1000 (mg/L)
	concentration of ground water into SW-001	C_g1 =	2.8440 (mg/L)
	concentration of ground water into SW-002	C_g2 =	2.8440 (mg/L)
	concentration of ground water into SW-003	C_g3 =	2.8440 (mg/L)
	concentration of ground water into SW-004	C_g4 =	2.8440 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	2.8440 (mg/L)
	concentration of ground water into SW-005	C_g5 =	2.8440 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	2.8440 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	2.8440 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.8101 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	0.1000 (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.8100 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	235.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	235.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	235.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.1500 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.8100 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	235.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	235.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	235.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.2255 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	2.8440 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	2.8440 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	2.8440 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
<b>Low Flow</b>			
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	14.48734 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.84900 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	21.53506 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	8.57503 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.25562 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.09829 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.02056 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00012 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	25.11897 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.25562 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	0.11360 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.02056 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00194 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00023 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00011 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	111.52646 (mg/s)
	mass flux of West Pit overflow	M_sms =	0.23772 (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.14097 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00002 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.19392 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	182.70140 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	37.82804 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	94.16768 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	17.65920 (mg/s)
<b>Low Flow</b>			
Mass balance at each node	mass flux in river at SW-001	M_r1 =	15.3363 (mg/s)
	mass flux in river at SW-002	M_r2 =	36.8714 (mg/s)
	mass flux in river at SW-003	M_r3 =	45.8210 (mg/s)
	mass flux in river at SW-004	M_r4 =	71.3322 (mg/s)
	mass flux in river at SW-004A	M_r4A =	183.4313 (mg/s)
	mass flux in river at SW-005	M_r5 =	366.1327 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	403.9607 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	515.7876 (mg/s)
	concentration in river at SW-001	C_r1 =	0.45925 (mg/L)
	concentration in river at SW-002	C_r2 =	0.90005 (mg/L)
	concentration in river at SW-003	C_r3 =	1.03440 (mg/L)
	concentration in river at SW-004	C_r4 =	1.30690 (mg/L)
	concentration in river at SW-004A	C_r4A =	1.87865 (mg/L)
	concentration in river at SW-005	C_r5 =	2.26174 (mg/L)
	concentration in river at USGS Gage	C_r6 =	2.30595 (mg/L)
	concentration in Colby Lake	C_cl =	1.68094 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case Parameter	Post-Closure Hardness		
Input concentration data	concentration of surface water into SW-001	C_s1 =	110.0000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	110.0000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	110.0000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	110.0000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	110.0000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	110.0000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	110.0000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	110.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	110.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	110.0000 (mg/L)
	concentration of West Pit overflow	C_sms =	313.2632 (mg/L)
	concentration of ground water into SW-001	C_g1 =	66.4200 (mg/L)
	concentration of ground water into SW-002	C_g2 =	66.4200 (mg/L)
	concentration of ground water into SW-003	C_g3 =	66.4200 (mg/L)
	concentration of ground water into SW-004	C_g4 =	66.4200 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	66.4200 (mg/L)
	concentration of ground water into SW-005	C_g5 =	66.4200 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	66.4200 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	66.4200 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	303.8585 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	313.2632 (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	1,729.3495 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	5,435.6906 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	5,435.6906 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	5,435.6906 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	71.5000 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	1,729.3495 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	5,435.6906 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	5,435.6906 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	5,435.6906 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	43.5200 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	66.4200 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	66.4200 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	66.4200 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	338.34348 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	3,113.00000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	502.93907 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	200.26497 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	95.88102 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	2.27357 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.47561 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00286 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	586.63934 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	95.88102 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	355.87783 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.47561 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.04490 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00534 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00248 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	2,604.63688 (mg/s)
	mass flux of West Pit overflow	M_sms =	744.73687 (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	300.97424 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.03789 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	92.43429 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	4,266.88722 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	883.45242 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	2,199.23262 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	1,214.07000 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	3,451.3435 (mg/s)
	mass flux in river at SW-002	M_r2 =	3,954.2825 (mg/s)
	mass flux in river at SW-003	M_r3 =	4,253.1806 (mg/s)
	mass flux in river at SW-004	M_r4 =	5,292.1100 (mg/s)
	mass flux in river at SW-004A	M_r4A =	9,034.9301 (mg/s)
	mass flux in river at SW-005	M_r5 =	13,301.8174 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	14,185.2698 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	17,598.5724 (mg/s)
	Low Flow		
	concentration in river at SW-001	C_r1 =	103.35220 (mg/L)
	concentration in river at SW-002	C_r2 =	96.52572 (mg/L)
	concentration in river at SW-003	C_r3 =	96.01448 (mg/L)
	concentration in river at SW-004	C_r4 =	96.95855 (mg/L)
	concentration in river at SW-004A	C_r4A =	92.53322 (mg/L)
	concentration in river at SW-005	C_r5 =	82.17042 (mg/L)
	concentration in river at USGS Gage	C_r6 =	80.97454 (mg/L)
	concentration in Colby Lake	C_cl =	109.39504 (mg/L)

**Partridge River Mass-Balance Model - Mine Site - Proposed Action**

Case Parameter	Post-Closure Potassium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	1.3000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	1.3000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	1.3000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	1.3000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	1.3000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	1.3000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	1.3000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	1.3000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	1.3000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	2.7000 (mg/L)
	concentration of West Pit overflow	C_sms =	15.6380 (mg/L)
	concentration of ground water into SW-001	C_g1 =	1.7500 (mg/L)
	concentration of ground water into SW-002	C_g2 =	1.7500 (mg/L)
	concentration of ground water into SW-003	C_g3 =	1.7500 (mg/L)
	concentration of ground water into SW-004	C_g4 =	1.7500 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	1.7500 (mg/L)
	concentration of ground water into SW-005	C_g5 =	1.7500 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	1.7500 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	1.7500 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	14.9445 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	15.6380 (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	49.0000 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	38.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	38.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	38.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	4.4500 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	49.0000 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	38.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	38.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	38.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	2.2600 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	1.7500 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	1.7500 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	1.7500 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
<b>Low Flow</b>			
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	8.91450 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	76.41000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	13.25118 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	5.27648 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	4.71567 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.01589 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00332 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00002 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	15.45647 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	4.71567 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	17.76414 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00332 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00031 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00004 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00002 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	68.62563 (mg/s)
	mass flux of West Pit overflow	M_sms =	37.17459 (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	8.52791 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00107 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	5.75290 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	112.42175 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	23.27675 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	57.94425 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	14.34810 (mg/s)
<b>Low Flow</b>			
Mass balance at each node	mass flux in river at SW-001	M_r1 =	85.3245 (mg/s)
	mass flux in river at SW-002	M_r2 =	98.5767 (mg/s)
	mass flux in river at SW-003	M_r3 =	108.5871 (mg/s)
	mass flux in river at SW-004	M_r4 =	146.5271 (mg/s)
	mass flux in river at SW-004A	M_r4A =	266.6092 (mg/s)
	mass flux in river at SW-005	M_r5 =	379.0309 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	402.3077 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	474.6000 (mg/s)
	concentration in river at SW-001	C_r1 =	2.55508 (mg/L)
	concentration in river at SW-002	C_r2 =	2.40627 (mg/L)
	concentration in river at SW-003	C_r3 =	2.45133 (mg/L)
	concentration in river at SW-004	C_r4 =	2.68457 (mg/L)
	concentration in river at SW-004A	C_r4A =	2.73054 (mg/L)
	concentration in river at SW-005	C_r5 =	2.34142 (mg/L)
	concentration in river at USGS Gage	C_r6 =	2.29651 (mg/L)
	concentration in Colby Lake	C_cl =	1.68537 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case Parameter	Post-Closure Magnesium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	8.0000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	8.0000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	8.0000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	8.0000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	8.0000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	8.0000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	8.0000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	8.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	8.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	10.5000 (mg/L)
	concentration of West Pit overflow	C_sms =	19.0199 (mg/L)
	concentration of ground water into SW-001	C_g1 =	8.0200 (mg/L)
	concentration of ground water into SW-002	C_g2 =	8.0200 (mg/L)
	concentration of ground water into SW-003	C_g3 =	8.0200 (mg/L)
	concentration of ground water into SW-004	C_g4 =	8.0200 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	8.0200 (mg/L)
	concentration of ground water into SW-005	C_g5 =	8.0200 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	8.0200 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	8.0200 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	19.7447 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	19.0199 (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	93.0000 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	1,030.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	1,030.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	1,030.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	9.0100 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	93.0000 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	1,030.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	1,030.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	1,030.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	4.8800 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	8.0200 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	8.0200 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	8.0200 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	40.85388 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	297.15000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	60.72826 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	24.18135 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	6.23035 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.43082 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.09012 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00054 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	70.83480 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	6.23035 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	21.60591 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.09012 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00851 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00101 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00047 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	314.50147 (mg/s)
	mass flux of West Pit overflow	M_sms =	45.21416 (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	16.18563 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00204 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	11.64801 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	515.21282 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	106.67402 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	265.55022 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	88.29600 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	338.0039 (mg/s)
	mass flux in river at SW-002	M_r2 =	398.7321 (mg/s)
	mass flux in river at SW-003	M_r3 =	429.6653 (mg/s)
	mass flux in river at SW-004	M_r4 =	528.4370 (mg/s)
	mass flux in river at SW-004A	M_r4A =	915.9864 (mg/s)
	mass flux in river at SW-005	M_r5 =	1,431.2012 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	1,537.8752 (mg/s)
	mass flux into Colby Lake	M_cl =	1,891.7214 (mg/s)
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C_r1 =	10.12169 (mg/L)
	concentration in river at SW-002	C_r2 =	9.73322 (mg/L)
	concentration in river at SW-003	C_r3 =	9.69959 (mg/L)
	concentration in river at SW-004	C_r4 =	9.68168 (mg/L)
	concentration in river at SW-004A	C_r4A =	9.38130 (mg/L)
	concentration in river at SW-005	C_r5 =	8.84108 (mg/L)
	concentration in river at USGS Gage	C_r6 =	8.77874 (mg/L)
	concentration in Colby Lake	C_cl =	8.29038 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case Parameter	Post-Closure Manganese		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.1500 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.1500 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.1500 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.1500 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.1500 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.1500 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.1500 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.1500 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.1500 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0086 (mg/L)
	concentration of West Pit overflow	C_sms =	0.0100 (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.1240 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.1240 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.1240 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.1240 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.1240 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.1240 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.1240 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.1240 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.1780 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	0.0100 (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.7500 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	47.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	47.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	47.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.1160 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.7500 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	47.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	47.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	47.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.1604 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.1240 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.1240 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.1240 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.63166 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.24338 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.93894 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.37388 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.05616 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.01966 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00411 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00002 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	1.09520 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.05616 (mg/s)
	mass flux of ground water into West Pit	M_gwp =	0.01136 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00411 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00039 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00005 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00002 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	4.86262 (mg/s)
	mass flux of West Pit overflow	M_sms =	0.02377 (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.13053 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00002 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.14996 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	7.96588 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	1.64932 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	4.10576 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	1.65555 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	0.8750 (mg/s)
	mass flux in river at SW-002	M_r2 =	1.8140 (mg/s)
	mass flux in river at SW-003	M_r3 =	2.2678 (mg/s)
	mass flux in river at SW-004	M_r4 =	3.4351 (mg/s)
	mass flux in river at SW-004A	M_r4A =	8.6020 (mg/s)
	mass flux in river at SW-005	M_r5 =	16.5679 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	18.2172 (mg/s)
	mass flux into Colby Lake	M_cl =	23.9785 (mg/s)
	Low Flow		
	concentration in river at SW-001	C_r1 =	0.02620 (mg/L)
	concentration in river at SW-002	C_r2 =	0.04428 (mg/L)
	concentration in river at SW-003	C_r3 =	0.05120 (mg/L)
	concentration in river at SW-004	C_r4 =	0.06294 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.08810 (mg/L)
	concentration in river at SW-005	C_r5 =	0.10235 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.10399 (mg/L)
	concentration in Colby Lake	C_cl =	0.14159 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case Parameter	Post-Closure Sodium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	2.5000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	2.5000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	2.5000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	2.5000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	2.5000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	2.5000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	2.5000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	2.5000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	2.5000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	4.8000 (mg/L)
	concentration of West Pit overflow	C_sms =	169.7796 (mg/L)
	concentration of ground water into SW-001	C_g1 =	13.3300 (mg/L)
	concentration of ground water into SW-002	C_g2 =	13.3300 (mg/L)
	concentration of ground water into SW-003	C_g3 =	13.3300 (mg/L)
	concentration of ground water into SW-004	C_g4 =	13.3300 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	13.3300 (mg/L)
	concentration of ground water into SW-005	C_g5 =	13.3300 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	13.3300 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	13.3300 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	428.6633 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	169.7796 (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	681.0000 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	338.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	338.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	338.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	7.1900 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	681.0000 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	338.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	338.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	338.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	4.6000 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	13.3300 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	13.3300 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	13.3300 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Low Flow			
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	67.90302 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	135.84000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	100.93613 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	40.19169 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	135.26255 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.14137 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.02957 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00018 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	117.73415 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	135.26255 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	192.86319 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.02957 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00279 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00033 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00015 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	522.73125 (mg/s)
	mass flux of West Pit overflow	M_sms =	403.60009 (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	118.52056 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.01492 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	9.29514 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	856.33253 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	177.30233 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	441.36963 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	27.59250 (mg/s)
Low Flow			
Mass balance at each node	mass flux in river at SW-001	M_r1 =	203.7430 (mg/s)
	mass flux in river at SW-002	M_r2 =	304.6792 (mg/s)
	mass flux in river at SW-003	M_r3 =	480.3045 (mg/s)
	mass flux in river at SW-004	M_r4 =	926.1974 (mg/s)
	mass flux in river at SW-004A	M_r4A =	1,980.3594 (mg/s)
	mass flux in river at SW-005	M_r5 =	2,836.6919 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	3,013.9943 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	3,482.9564 (mg/s)
	concentration in river at SW-001	C_r1 =	6.10119 (mg/L)
	concentration in river at SW-002	C_r2 =	7.43735 (mg/L)
	concentration in river at SW-003	C_r3 =	10.84275 (mg/L)
	concentration in river at SW-004	C_r4 =	16.96918 (mg/L)
	concentration in river at SW-004A	C_r4A =	20.28229 (mg/L)
	concentration in river at SW-005	C_r5 =	17.52333 (mg/L)
	concentration in river at USGS Gage	C_r6 =	17.20495 (mg/L)
	concentration in Colby Lake	C_cl =	7.46776 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case Parameter	Post-Closure Nickel		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0016 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0016 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0016 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0016 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0016 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0016 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0016 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0016 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0033 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0016 (mg/L)
	concentration of West Pit overflow	C sms =	0.0715 (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0163 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0163 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0163 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0163 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0163 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0163 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0163 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0163 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	0.0153 (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	0.0715 (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	0.3824 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	762.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	762.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	762.0000 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	0.0190 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	0.3824 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C gC3s =	762.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	762.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	762.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0080 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0163 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0163 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0163 (mg/L)
	concentration of liner leakage from WWTF ponc	C gWTFp =	#N/A (mg/L)

			Low Flow
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	(mg/s)
	mass flux of ground water into SW-001	M g1 =	0.08293 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.04387 (mg/s)
	mass flux of surface water into SW-002	M s2 =	(mg/s)
	mass flux of ground water into SW-002	M g2 =	0.12327 (mg/s)
	mass flux of surface water into SW-003	M s3 =	(mg/s)
	mass flux of ground water into SW-003	M g3 =	0.04909 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep 003 =	0.00483 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M gC3 003 =	0.31872 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO 00 =	0.06667 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M gC3s 003 =	0.00040 (mg/s)
	mass flux of surface water into SW-004	M s4 =	(mg/s)
	mass flux of ground water into SW-004	M g4 =	0.14379 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep 004 =	0.00483 (mg/s)
	mass flux of seepage from West Pit	M gwp =	0.08127 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M gC3 004 =	(mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO 00 =	0.06667 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00629 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs 0 =	0.00075 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00035 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.63841 (mg/s)
	mass flux of West Pit overflow	M sms =	0.17008 (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M gC12 =	0.06655 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M gC12s =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M gO12 =	0.02456 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	- (mg/s)
	mass flux of ground water into SW-005	M g5 =	1.04584 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.21654 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	0.53905 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.03642 (mg/s)

			Low Flow
Mass balance at each node	mass flux in river at SW-001	M r1 =	0.1268 (mg/s)
	mass flux in river at SW-002	M r2 =	0.2501 (mg/s)
	mass flux in river at SW-003	M r3 =	0.6898 (mg/s)
	mass flux in river at SW-004	M r4 =	0.9941 (mg/s)
	mass flux in river at SW-004A	M r4A =	1.8937 (mg/s)
	mass flux in river at SW-005	M r5 =	2.9396 (mg/s)
	mass flux in river at USGS Gage	M r6 =	3.1561 (mg/s)
	mass flux into Colby Lake	M cl =	3.7316 (mg/s)

			Low Flow
Convert mass flux to concentration	concentration in river at SW-001	C r1 =	0.00380 (mg/L)
	concentration in river at SW-002	C r2 =	0.00610 (mg/L)
	concentration in river at SW-003	C r3 =	0.01557 (mg/L)
	concentration in river at SW-004	C r4 =	0.01821 (mg/L)
	concentration in river at SW-004A	C r4A =	0.01940 (mg/L)
	concentration in river at SW-005	C r5 =	0.01816 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.01802 (mg/L)
	concentration in Colby Lake	C cl =	0.00506 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case Parameter	Post-Closure Lead		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0005 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0005 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0005 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0005 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0005 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0005 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0005 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0005 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0005 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0002 (mg/L)
	concentration of West Pit overflow	C sms =	0.0065 (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0011 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0011 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0011 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0011 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0011 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0011 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0011 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0011 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	0.0062 (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	0.0065 (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	0.0457 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	0.0528 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0528 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0528 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	0.0457 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C gC3s =	0.0528 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.0528 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0528 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0007 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0011 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0011 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0011 (mg/L)
	concentration of liner leakage from WWTF pond	C gWTFp =	#N/A (mg/L)

		Low Flow	
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	(mg/s)
	mass flux of ground water into SW-001	M g1 =	0.00571 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.00425 (mg/s)
	mass flux of surface water into SW-002	M s2 =	- (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.00848 (mg/s)
	mass flux of surface water into SW-003	M s3 =	- (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.00338 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	0.00196 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M gC3_003 =	0.00002 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_00 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	- (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.00989 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	0.00196 (mg/s)
	mass flux of seepage from West Pit	M gwp =	0.00737 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_00 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_00 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.04392 (mg/s)
	mass flux of West Pit overflow	M sms =	0.01541 (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M gC12 =	0.00795 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	- (mg/s)
	mass flux of ground water into SW-005	M g5 =	0.07195 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.01490 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	0.03708 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.00552 (mg/s)

		Low Flow	
Mass balance at each node	mass flux in river at SW-001	M r1 =	0.0100 (mg/s)
	mass flux in river at SW-002	M r2 =	0.0184 (mg/s)
	mass flux in river at SW-003	M r3 =	0.0238 (mg/s)
	mass flux in river at SW-004	M r4 =	0.0430 (mg/s)
	mass flux in river at SW-004A	M r4A =	0.1103 (mg/s)
	mass flux in river at SW-005	M r5 =	0.1823 (mg/s)
	mass flux in river at USGS Gage	M r6 =	0.1972 (mg/s)
	mass flux into Colby Lake	M cl =	0.2398 (mg/s)

		Low Flow	
Convert mass flux to concentration	concentration in river at SW-001	C r1 =	0.00030 (mg/L)
	concentration in river at SW-002	C r2 =	0.00045 (mg/L)
	concentration in river at SW-003	C r3 =	0.00054 (mg/L)
	concentration in river at SW-004	C r4 =	0.00079 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00113 (mg/L)
	concentration in river at SW-005	C r5 =	0.00113 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00113 (mg/L)
		concentration in Colby Lake	C cl =

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case Parameter	Post-Closure Antimony		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0015 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0015 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0015 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0015 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0015 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0015 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0015 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0015 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0015 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0015 (mg/L)
	concentration of West Pit overflow	C_sms =	0.1201 (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0015 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0015 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0015 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0015 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0015 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0015 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0015 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0015 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.0285 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	0.1201 (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0800 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.0800 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0800 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0800 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0004 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0800 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.0800 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0800 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0800 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0003 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0015 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0015 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0015 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Low Flow			
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00764 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.04245 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.01136 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00452 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.00899 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00003 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.01325 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.00899 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	0.13642 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.05882 (mg/s)
	mass flux of West Pit overflow	M_sms =	0.28549 (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.01392 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.00052 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.09636 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.01995 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.04967 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.01656 (mg/s)
Low Flow			
Mass balance at each node	mass flux in river at SW-001	M_r1 =	0.0501 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.0614 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.0750 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.2337 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.5924 (mg/s)
	mass flux in river at SW-005	M_r5 =	0.6888 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	0.7087 (mg/s)
	mass flux into Colby Lake	M_cl =	0.7750 (mg/s)
Low Flow			
Convert mass flux to concentration	concentration in river at SW-001	C_r1 =	0.00150 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00150 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00169 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00428 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00607 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00425 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00405 (mg/L)
	concentration in Colby Lake	C_cl =	0.00395 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case Parameter	Post-Closure Selenium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0005 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0005 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0005 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0005 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0005 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0005 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0005 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0005 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0005 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0005 (mg/L)
	concentration of West Pit overflow	C_sms =	0.0057 (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0019 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0019 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0019 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0019 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0019 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0019 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0019 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0019 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.0133 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	0.0057 (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0029 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.0029 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0029 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0029 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0019 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0029 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.0029 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0029 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0029 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0004 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0019 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0019 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0019 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Low Flow			
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00973 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.01415 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.01446 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00576 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.00421 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.01687 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.00421 (mg/s)
	mass flux of ground water into West Pit	M_gwp =	0.00644 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.07490 (mg/s)
	mass flux of West Pit overflow	M_sms =	0.01348 (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.00050 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.00246 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.12270 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.02540 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.06324 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00552 (mg/s)
Low Flow			
Mass balance at each node	mass flux in river at SW-001	M_r1 =	0.0239 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.0383 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.0483 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.0758 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.1672 (mg/s)
	mass flux in river at SW-005	M_r5 =	0.2856 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	0.3153 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	0.3840 (mg/s)
	concentration in river at SW-001	C_r1 =	0.00072 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00094 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00109 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00139 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00171 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00179 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00180 (mg/L)
	concentration in Colby Lake	C_cl =	0.00077 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case Parameter	Post-Closure sulfate		
Input concentration data	concentration of surface water into SW-001	C_s1 =	9.0000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	9.0000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	9.0000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	9.0000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	9.0000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	9.0000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	9.0000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	9.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	9.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	22.0000 (mg/L)
	concentration of West Pit overflow	C_sms =	246.9858 (mg/L)
	concentration of ground water into SW-001	C_g1 =	16.1300 (mg/L)
	concentration of ground water into SW-002	C_g2 =	16.1300 (mg/L)
	concentration of ground water into SW-003	C_g3 =	16.1300 (mg/L)
	concentration of ground water into SW-004	C_g4 =	16.1300 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	16.1300 (mg/L)
	concentration of ground water into SW-005	C_g5 =	16.1300 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	16.1300 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	16.1300 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	178.7834 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	246.9858 (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	2,128.7143 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	9,600.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	9,600.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	9,600.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	68.3000 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	2,128.7143 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	9,600.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	9,600.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	9,600.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	35.1700 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	16.1300 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	16.1300 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	16.1300 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Low Flow			
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	82.16622 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	622.60000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	122.13802 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	48.63406 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	56.41421 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	4.01536 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.83997 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00505 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	142.46451 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	56.41421 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	280.56648 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.83997 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.07930 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00942 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00438 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	632.53226 (mg/s)
	mass flux of West Pit overflow	M_sms =	587.13464 (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	370.47930 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.04665 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	88.29738 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	1,036.20733 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	214.54513 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	534.08043 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	99.33300 (mg/s)
Low Flow			
Mass balance at each node	mass flux in river at SW-001	M_r1 =	704.7662 (mg/s)
	mass flux in river at SW-002	M_r2 =	826.9042 (mg/s)
	mass flux in river at SW-003	M_r3 =	936.8129 (mg/s)
	mass flux in river at SW-004	M_r4 =	1,417.1962 (mg/s)
	mass flux in river at SW-004A	M_r4A =	3,095.6864 (mg/s)
	mass flux in river at SW-005	M_r5 =	4,131.8938 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	4,346.4389 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	4,979.8523 (mg/s)
	concentration in river at SW-001	C_r1 =	21.10458 (mg/L)
	concentration in river at SW-002	C_r2 =	20.18508 (mg/L)
	concentration in river at SW-003	C_r3 =	21.14831 (mg/L)
	concentration in river at SW-004	C_r4 =	25.96493 (mg/L)
	concentration in river at SW-004A	C_r4A =	31.70515 (mg/L)
	concentration in river at SW-005	C_r5 =	25.52429 (mg/L)
	concentration in river at USGS Gage	C_r6 =	24.81101 (mg/L)
	concentration in Colby Lake	C_cl =	15.30609 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case Parameter	Post-Closure Thallium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0004 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0004 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0004 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0004 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0004 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0004 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0004 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0004 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0004 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0003 (mg/L)
	concentration of West Pit overflow	C_sms =	0.0003 (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0000 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0000 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0000 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0000 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0000 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0000 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0000 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0000 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.0003 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	0.0003 (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0000 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.0001 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0001 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0001 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0000 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.0001 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0001 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0001 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0000 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0000 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0000 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0000 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00002 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.00809 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.00003 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00001 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.00008 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.00004 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.00008 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	0.00029 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.00016 (mg/s)
	mass flux of West Pit overflow	M_sms =	0.00061 (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.00026 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.00005 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.00013 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00441 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	0.0081 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.0081 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.0082 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.0087 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.0094 (mg/s)
	mass flux in river at SW-005	M_r5 =	0.0097 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	0.0097 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	0.0143 (mg/s)
	Low Flow		
	concentration in river at SW-001	C_r1 =	0.00024 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00020 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00019 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00016 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00010 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00006 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00006 (mg/L)
	concentration in Colby Lake	C_cl =	0.00035 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case	Post-Closure		
Parameter	Vanadium		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0009 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0009 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0009 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0009 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0009 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0009 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0009 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0009 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0009 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0043 (mg/L)
	concentration of West Pit overflow	C sms =	0.0571 (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0043 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0043 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0043 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0043 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0043 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0043 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0043 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0043 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	0.0296 (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	0.0571 (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	1.4099 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	22.2556 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	27.7840 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	6.2684 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	0.0014 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	1.4099 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C gC3s =	22.2556 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	27.7840 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	6.2684 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0017 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0043 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0043 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0043 (mg/L)
	concentration of liner leakage from WWTF pond	C gWTFp =	#N/A (mg/L)

		Low Flow	
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	(mg/s)
	mass flux of ground water into SW-001	M g1 =	0.02190 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.12169 (mg/s)
	mass flux of surface water into SW-002	M s2 =	(mg/s)
	mass flux of ground water into SW-002	M g2 =	0.03256 (mg/s)
	mass flux of surface water into SW-003	M s3 =	(mg/s)
	mass flux of ground water into SW-003	M g3 =	0.01297 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep 003 =	0.00933 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M gC3_003 =	0.00931 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO 00 =	0.00243 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M gC3s_003 =	0.00001 (mg/s)
	mass flux of surface water into SW-004	M s4 =	(mg/s)
	mass flux of ground water into SW-004	M g4 =	0.03798 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep 004 =	0.00933 (mg/s)
	mass flux of seepage from West Pit	M gwp =	0.06484 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M gC3_004 =	(mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO 00 =	0.00243 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00005 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs 0 =	0.00003 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.16862 (mg/s)
	mass flux of West Pit overflow	M sms =	0.13568 (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M gC12 =	0.24538 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M gC12s =	0.00003 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M gO12 =	0.00181 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	- (mg/s)
	mass flux of ground water into SW-005	M g5 =	0.27624 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	(mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.05719 (mg/s)
mass flux of surface water into Colby Lake	M scl =	- (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	0.14238 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.00993 (mg/s)	
		Low Flow	
Mass balance at each node	mass flux in river at SW-001	M r1 =	0.1438 (mg/s)
	mass flux in river at SW-002	M r2 =	0.1762 (mg/s)
	mass flux in river at SW-003	M r3 =	0.2102 (mg/s)
	mass flux in river at SW-004	M r4 =	0.3249 (mg/s)
	mass flux in river at SW-004A	M r4A =	0.8764 (mg/s)
	mass flux in river at SW-005	M r5 =	1.1526 (mg/s)
	mass flux in river at USGS Gage	M r6 =	1.2098 (mg/s)
mass flux into Colby Lake	M cl =	1.3621 (mg/s)	
		Low Flow	
Convert mass flux to concentration	concentration in river at SW-001	C r1 =	0.00430 (mg/L)
	concentration in river at SW-002	C r2 =	0.00430 (mg/L)
	concentration in river at SW-003	C r3 =	0.00475 (mg/L)
	concentration in river at SW-004	C r4 =	0.00595 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00898 (mg/L)
	concentration in river at SW-005	C r5 =	0.00712 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00691 (mg/L)
concentration in Colby Lake	C cl =	0.00269 (mg/L)	

Partridge River Mass-Balance Model - Mine Site - Proposed Action

Case Parameter	Post-Closure Zinc			
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0160 (mg/L)	
	concentration of surface water into SW-002	C s2 =	0.0160 (mg/L)	
	concentration of surface water into SW-003	C s3 =	0.0160 (mg/L)	
	concentration of surface water into SW-004	C s4 =	0.0160 (mg/L)	
	concentration of surface water into SW-004A	C s4A =	0.0160 (mg/L)	
	concentration of surface water into SW-005	C s5 =	0.0160 (mg/L)	
	concentration of surface water into USGS Gage	C s6 =	0.0160 (mg/L)	
	concentration of surface water into Colby Lake	C scl =	0.0160 (mg/L)	
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0620 (mg/L)	
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0073 (mg/L)	
	concentration of West Pit overflow	C sms =	0.0380 (mg/L)	
	concentration of ground water into SW-001	C g1 =	0.0275 (mg/L)	
	concentration of ground water into SW-002	C g2 =	0.0275 (mg/L)	
	concentration of ground water into SW-003	C g3 =	0.0275 (mg/L)	
	concentration of ground water into SW-004	C g4 =	0.0275 (mg/L)	
	concentration of ground water into SW-004A	C g4A =	0.0275 (mg/L)	
	concentration of ground water into SW-005	C g5 =	0.0275 (mg/L)	
	concentration of ground water into USGS Gage	C g6 =	0.0275 (mg/L)	
	concentration of ground water into Colby Lake	C gcl =	0.0275 (mg/L)	
	concentration of ground water seepage from East Pit	C gep =	0.0282 (mg/L)	
	concentration of ground water seepage from West Pit	C gwp =	0.0380 (mg/L)	
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	0.0900 (mg/L)	
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	26.0000 (mg/L)	
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	26.0000 (mg/L)	
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	26.0000 (mg/L)	
	concentration of liner leakage from LOSP	C gC4LO =	#N/A (mg/L)	
	concentration of seepage from Overburden (Storage)	C gOS =	#N/A (mg/L)	
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	0.0030 (mg/L)	
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	0.0900 (mg/L)	
	concentration of liner leakage from Cat 3 sumps	C gC3s =	26.0000 (mg/L)	
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	26.0000 (mg/L)	
	concentration of liner leakage from Cat 4 sumps	C gC4s =	26.0000 (mg/L)	
	concentration of liner leakage from LOSP sumps	C gC4LOs =	#N/A (mg/L)	
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0046 (mg/L)	
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)	
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0275 (mg/L)	
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0275 (mg/L)	
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0275 (mg/L)	
	concentration of liner leakage from WWTF ponc	C gWTFp =	#N/A (mg/L)	
	Low Flow			
	Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	- (mg/s)
		mass flux of ground water into SW-001	M g1 =	0.14009 (mg/s)
		mass flux of surface discharges from upstream of PM-1	M sns =	0.20744 (mg/s)
		mass flux of surface water into SW-002	M s2 =	- (mg/s)
mass flux of ground water into SW-002		M g2 =	0.20823 (mg/s)	
mass flux of surface water into SW-003		M s3 =	- (mg/s)	
mass flux of ground water into SW-003		M g3 =	0.08292 (mg/s)	
mass flux of seepage from East Pit to SW-003		M gep 003 =	0.00891 (mg/s)	
mass flux of liner leakage from Cat 3 stockpile to SW-003		M gC3 003 =	0.01087 (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-003		M gC3LO 00 =	0.00227 (mg/s)	
mass flux of liner leakage from Cat 3 sumps to SW-003		M gC3s 003 =	0.00001 (mg/s)	
mass flux of surface water into SW-004		M s4 =	- (mg/s)	
mass flux of ground water into SW-004		M g4 =	0.24289 (mg/s)	
mass flux of seepage from East Pit to SW-004		M gep 004 =	0.00891 (mg/s)	
mass flux of seepage from West Pit		M gwp =	0.04314 (mg/s)	
mass flux of liner leakage from Cat 3 stockpile to SW-004		M gC3 004 =	- (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-004		M gC3LO 00 =	0.00227 (mg/s)	
mass flux of liner leakage from Cat 4 stockpile		M gC4 =	0.00021 (mg/s)	
mass flux of liner leakage from LOSP		M gC4LO =	#N/A (mg/s)	
mass flux of seepage from Overburden (Storage)		M gOS =	#N/A (mg/s)	
mass flux of liner leakage from Cat 3LO sumps to SW-004		M gC3LOs 0 =	0.00003 (mg/s)	
mass flux of liner leakage from Cat 4 sumps		M gC4s =	0.00001 (mg/s)	
mass flux of liner leakage from LOSP sumps		M gC4LOs =	#N/A (mg/s)	
mass flux of seepage from Overburden Ponds - PW1		M gOp1 =	- (mg/s)	
mass flux of leakage from Haul Road Pond - PW2		M gHRp2 =	- (mg/s)	
mass flux of leakage from Haul Road Pond - PW4		M gHRp4 =	- (mg/s)	
mass flux of leakage from RTH Pond - PW3		M gRTHp =	- (mg/s)	
mass flux of liner leakage from WWTF pond		M gWTFp =	#N/A (mg/s)	
mass flux of surface water into SW-004A		M s4A =	- (mg/s)	
mass flux of ground water into SW-004A		M g4A =	1.07840 (mg/s)	
mass flux of West Pit overflow		M sms =	0.09029 (mg/s)	
mass flux of liner leakage from Cat 1/2 stockpile		M gC12 =	0.01566 (mg/s)	
mass flux of liner leakage from Cat 1/2 sumps		M gC12s =	0.00000 (mg/s)	
mass flux of seepage from Overburden (Cat 1/2)		M gO12 =	0.00388 (mg/s)	
mass flux of seepage from Overburden Pond - PW7		M gOp7 =	#N/A (mg/s)	
mass flux of surface water into SW-005		M s5 =	- (mg/s)	
mass flux of ground water into SW-005		M g5 =	1.76663 (mg/s)	
mass flux of surface water into USGS Gage		M s6 =	- (mg/s)	
mass flux of ground water into USGS Gage		M g6 =	0.36578 (mg/s)	
mass flux of surface water into Colby Lake		M scl =	- (mg/s)	
mass flux of ground water into Colby Lake		M gcl =	0.91055 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP		M shl =	0.68429 (mg/s)	
Low Flow				
Mass balance at each node		mass flux in river at SW-001	M r1 =	0.3475 (mg/s)
	mass flux in river at SW-002	M r2 =	0.5568 (mg/s)	
	mass flux in river at SW-003	M r3 =	0.6607 (mg/s)	
	mass flux in river at SW-004	M r4 =	0.9582 (mg/s)	
	mass flux in river at SW-004A	M r4A =	2.1465 (mg/s)	
	mass flux in river at SW-005	M r5 =	3.9131 (mg/s)	
	mass flux in river at USGS Gage	M r6 =	4.2789 (mg/s)	
Convert mass flux to concentration	mass flux into Colby Lake	M cl =	5.8737 (mg/s)	
Low Flow				
Convert mass flux to concentration	concentration in river at SW-001	C r1 =	0.01041 (mg/L)	
	concentration in river at SW-002	C r2 =	0.01357 (mg/L)	
	concentration in river at SW-003	C r3 =	0.01492 (mg/L)	
	concentration in river at SW-004	C r4 =	0.01756 (mg/L)	
	concentration in river at SW-004A	C r4A =	0.02198 (mg/L)	
	concentration in river at SW-005	C r5 =	0.02417 (mg/L)	
	concentration in river at USGS Gage	C r6 =	0.02443 (mg/L)	
concentration in Colby Lake	C cl =	0.01795 (mg/L)		

## Partridge River Mass-Balance Model--Mine Site-Proposed Action

### FLOWS

Case Flow	Post-Closure Average Flow Conditions (mean annual)			
Total flow in Partridge River	flow in river at SW-001	Q_r1_M =	5.70	(cfs)
	flow in river at SW-002	Q_r2_M =	11.39	(cfs)
	flow in river at SW-003	Q_r3_M =	13.15	(cfs)
	flow in river at SW-004	Q_r4_M =	19.70	(cfs)
	flow in river at SW-004A	Q_r4a_M =	47.18	(cfs)
	flow in river at SW-005	Q_r5_M =	85.54	(cfs)
	flow in river at USGS Gage	Q_r6_M =	89.89	(cfs)
	total flow into Colby Lake	Q_cl_M =	115.01	(cfs)
	flow check	Q_ck_M =	115.01	(cfs)
input flow data	surface water flow into SW-001	Q_s1_M =	4.52	(cfs)
	surface water flow into SW-002	Q_s2_M =	5.42	(cfs)
	surface water flow into SW-003	Q_s3_M =	1.64	(cfs)
	surface water flow into SW-004	Q_s4_M =	6.19	(cfs)
	surface water flow into SW-004A	Q_s4a_M =	23.67	(cfs)
	surface water flow into SW-005	Q_s5_M =	36.09	(cfs)
	surface water flow into USGS Gage	Q_s6_M =	3.88	(cfs)
	surface water flow into Colby Lake	Q_scl_M =	23.56	(cfs)
	surface water inflow from Hoyt Lakes WWTP	Q_shl_M =	0.39	(cfs)
	surface water inflow from discharges upstream of PM-1	Q_sns_M =	1.00	(cfs)
	surface water flow from West Pit overflow	Q_sms_M =	2.36	(cfs)
	ground water flow into SW-001	Q_g1_M =	0.18	(cfs)
	ground water flow into SW-002	Q_g2_M =	0.27	(cfs)
	ground water flow into SW-003	Q_g3_M =	0.11	(cfs)
	ground water flow into SW-004	Q_g4_M =	0.31	(cfs)
	ground water flow into SW-004A	Q_g4a_M =	1.39	(cfs)
	ground water flow into SW-005	Q_g5_M =	2.27	(cfs)
	ground water flow into USGS Gage	Q_g6_M =	0.47	(cfs)
	ground water flow into Colby Lake	Q_gcl_M =	1.17	(cfs)
	ground water seepage from East Pit to SW-003	Q_gep_003_M =	0.0112	(cfs)
	ground water seepage from East Pit to SW-004	Q_gep_004_M =	0.0112	(cfs)
	ground water seepage from West Pit	Q_gwp_M =	0.04	(cfs)
	ground water liner leakage from Cat 1/2 stockpile	Q_gC12_M =	0.0084	(cfs)
	ground water liner leakage from Cat 3 stockpile to SW-003	Q_gC3_003_M =	0.0000	(cfs)
	ground water liner leakage from Cat 3 stockpile to SW-004	Q_gC3_004_M =	-	(cfs)
	ground water liner leakage from Cat 3LO stockpile to SW-003	Q_gC3LO_003_M =	0.0000	(cfs)
	ground water liner leakage from Cat 3LO stockpile to SW-004	Q_gC3LO_004_M =	0.0000	(cfs)
	ground water liner leakage from Cat 4 stockpile	Q_gC4_M =	0.0000	(cfs)
	ground water liner leakage from LOSP	Q_gC4LO_M =	-	(cfs)
	ground water seepage from Overburden Storage	Q_gOS_M =	-	(cfs)
	ground water seepage from Overburden (Cat 1/2)	Q_gO12_M =	0.0628	(cfs)
	ground water liner leakage from Cat 1/2 sumps	Q_gC12s_M =	0.0000	(cfs)
	ground water liner leakage from Cat 3 sumps	Q_gC3s_M =	0.0000	(cfs)
	ground water liner leakage from Cat 3LO sumps	Q_gC3LOs_M =	0.0000	(cfs)
	ground water liner leakage from Cat 4 sumps	Q_gC4s_M =	0.0000	(cfs)
	ground water liner leakage from LOSP sumps	Q_gC4LOs_M =	-	(cfs)
	ground water seepage from Overburden pond - PW1	Q_gOp1_M =	-	(cfs)
	ground water seepage from Overburden pond - PW7	Q_gOp7_M =	-	(cfs)
	ground water leakage from Haul Road pond - PW2	Q_gHRp2_M =	-	(cfs)
	ground water leakage from Haul Road pond - PW4	Q_gHRp4_M =	-	(cfs)
	ground water leakage from RTH pond - PW3	Q_gRTHp_M =	-	(cfs)
	ground water liner leakage from WWTF pond	Q_gWTFp_M =	-	(cfs)



Partridge River Mass-Balance Model--Mine Site-Proposed Action

Case Parameter	Post-Closure Silver		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0001 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0001 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0001 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0001 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0001 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0001 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0001 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0001 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0001 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0001 (mg/L)
	concentration of West Pit overflow	C sms =	0.0009 (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0006 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0006 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0006 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0006 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0006 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0006 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0006 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0006 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	0.0002 (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	0.0009 (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	0.0007 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	0.0007 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0007 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0007 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	0.0007 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C gC3s =	0.0007 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.0007 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0007 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	- (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0006 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0000 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0006 (mg/L)
	concentration of liner leakage from WWTP pond	C gWTFp =	#N/A (mg/L)
Average Flow			
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	0.01279 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.00280 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.00340 (mg/s)
	mass flux of surface water into SW-002	M s2 =	0.01534 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.00416 (mg/s)
	mass flux of surface water into SW-003	M s3 =	0.00464 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.00166 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep 003 =	0.00007 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M gC3 003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO 003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M gC3s 003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	0.01751 (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.00486 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep 004 =	0.00007 (mg/s)
	mass flux of seepage from West Pit	M gwp =	0.00105 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M gC3 004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO 004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs 004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTP pond	M gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M s4A =	0.06699 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.02157 (mg/s)
	mass flux of West Pit overflow	M sms =	0.06149 (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M gC12 =	0.00017 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	0.10212 (mg/s)
	mass flux of ground water into SW-005	M g5 =	0.03533 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	0.01098 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.00732 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	0.06667 (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	0.01821 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.00110 (mg/s)
Average Flow			
Mass balance at each node	mass flux in river at SW-001	M r1 =	0.0190 (mg/s)
	mass flux in river at SW-002	M r2 =	0.0385 (mg/s)
	mass flux in river at SW-003	M r3 =	0.0449 (mg/s)
	mass flux in river at SW-004	M r4 =	0.0683 (mg/s)
	mass flux in river at SW-004A	M r4A =	0.2186 (mg/s)
	mass flux in river at SW-005	M r5 =	0.3560 (mg/s)
	mass flux in river at USGS Gage	M r6 =	0.3743 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M cl =	0.4603 (mg/s)
	concentration in river at SW-001	C r1 =	0.00012 (mg/L)
	concentration in river at SW-002	C r2 =	0.00012 (mg/L)
	concentration in river at SW-003	C r3 =	0.00012 (mg/L)
	concentration in river at SW-004	C r4 =	0.00012 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00016 (mg/L)
	concentration in river at SW-005	C r5 =	0.00015 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00015 (mg/L)
	concentration in Colby Lake	C cl =	0.00014 (mg/L)

Partridge River Mass-Balance Model--Mine Site-Proposed Action

Case Parameter	Post-Closure Aluminum		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0700 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0700 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0700 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0700 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0700 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0700 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0700 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0700 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0700 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0173 (mg/L)
	concentration of West Pit overflow	C_sms =	0.0186 (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.1250 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.1250 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.1250 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.1250 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.1250 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.1250 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.1250 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.1250 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.5350 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	0.0186 (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	1.6800 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	83.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	83.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	83.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.1400 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	1.6800 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	83.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	83.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	83.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.4106 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.1250 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0000 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.1250 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Average Flow			
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	8.95493 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.63675 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.48959 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	10.73662 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.94651 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	3.24975 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.37689 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.16883 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.06887 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.01430 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00004 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	12.25496 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	1.10403 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.16883 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	0.02109 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.01430 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00069 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00008 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00004 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	46.89266 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	4.90183 (mg/s)
	mass flux of West Pit overflow	M_sms =	1.24025 (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.40169 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00004 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.24865 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	71.48702 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	8.03013 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	7.68505 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	1.66263 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	46.67236 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	4.13888 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.77259 (mg/s)
Average Flow			
Mass balance at each node	mass flux in river at SW-001	M_r1 =	10.0813 (mg/s)
	mass flux in river at SW-002	M_r2 =	21.7644 (mg/s)
	mass flux in river at SW-003	M_r3 =	25.6431 (mg/s)
	mass flux in river at SW-004	M_r4 =	39.2071 (mg/s)
	mass flux in river at SW-004A	M_r4A =	92.8922 (mg/s)
	mass flux in river at SW-005	M_r5 =	172.4054 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	181.7570 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	233.3409 (mg/s)
	concentration in river at SW-001	C_r1 =	0.06249 (mg/L)
	concentration in river at SW-002	C_r2 =	0.06753 (mg/L)
	concentration in river at SW-003	C_r3 =	0.06893 (mg/L)
	concentration in river at SW-004	C_r4 =	0.07034 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.06957 (mg/L)
	concentration in river at SW-005	C_r5 =	0.07122 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.07145 (mg/L)
	concentration in Colby Lake	C_cl =	0.07169 (mg/L)

Partridge River Mass-Balance Model--Mine Site-Proposed Action

Case Parameter	Post-Closure Arsenic		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0021 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0021 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0021 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0021 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0021 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0021 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0021 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0021 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0021 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0065 (mg/L)
	concentration of West Pit overflow	C_sms =	0.1054 (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0022 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0022 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0022 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0022 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0022 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0022 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0022 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0022 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.0229 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	0.1054 (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.7100 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.7100 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.7100 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.7100 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0027 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.7100 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.7100 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.7100 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.7100 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0016 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0022 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0000 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0022 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Average Flow			
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	0.26993 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.01100 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.18395 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	0.32363 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.01636 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.09796 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00651 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.00724 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00059 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00012 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.36940 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.01908 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.00724 (mg/s)
	mass flux of liner leakage from West Pit	M_gwp =	0.11978 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00012 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00001 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	1.41348 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.08470 (mg/s)
	mass flux of West Pit overflow	M_sms =	7.04214 (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.16976 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00002 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.00480 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	2.15482 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.13876 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.23165 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.02873 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	1.40684 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.07152 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.02329 (mg/s)
Average Flow			
Mass balance at each node	mass flux in river at SW-001	M_r1 =	0.4649 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.8049 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.9173 (mg/s)
	mass flux in river at SW-004	M_r4 =	1.4329 (mg/s)
	mass flux in river at SW-004A	M_r4A =	10.1478 (mg/s)
	mass flux in river at SW-005	M_r5 =	12.4414 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	12.7018 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	14.2034 (mg/s)
	concentration in river at SW-001	C_r1 =	0.00288 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00250 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00247 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00257 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00760 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00514 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00499 (mg/L)
	concentration in Colby Lake	C_cl =	0.00436 (mg/L)

Partridge River Mass-Balance Model--Mine Site-Proposed Action

Case Parameter	Post-Closure Boron		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0450 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0450 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0450 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0450 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0450 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0450 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0450 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0450 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0450 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0960 (mg/L)
	concentration of West Pit overflow	C sms =	0.2765 (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0870 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0870 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0870 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0870 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0870 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0870 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0870 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0870 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	0.1816 (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	0.2765 (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	0.7600 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	0.7600 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.7600 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.7600 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	0.0370 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	0.7600 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C gC3s =	0.7600 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.7600 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.7600 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0622 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0870 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0000 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0870 (mg/L)
	concentration of liner leakage from WWTF pond	C gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	Average Flow		
	mass flux of surface water into SW-001	M s1 =	5.75674 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.44318 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	2.71680 (mg/s)
	mass flux of surface water into SW-002	M s2 =	6.90211 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.65877 (mg/s)
	mass flux of surface water into SW-003	M s3 =	2.08912 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.26232 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	0.05729 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M gC3_003 =	0.00063 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00013 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	7.87819 (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.76841 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	0.05729 (mg/s)
	mass flux of seepage from West Pit	M gwp =	0.31410 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00013 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00001 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M s4A =	30.14528 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	3.41167 (mg/s)
	mass flux of West Pit overflow	M sms =	18.46740 (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M gC12 =	0.18172 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M gC12s =	0.00002 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M gO12 =	0.06572 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	45.95594 (mg/s)
	mass flux of ground water into SW-005	M g5 =	5.58897 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	4.94039 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	1.15719 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	30.00366 (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	2.88066 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.49667 (mg/s)
Mass balance at each node	Average Flow		
	mass flux in river at SW-001	M r1 =	8.9167 (mg/s)
	mass flux in river at SW-002	M r2 =	16.4776 (mg/s)
	mass flux in river at SW-003	M r3 =	18.8871 (mg/s)
	mass flux in river at SW-004	M r4 =	27.9052 (mg/s)
	mass flux in river at SW-004A	M r4A =	80.1770 (mg/s)
	mass flux in river at SW-005	M r5 =	131.7219 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M r6 =	137.6195 (mg/s)
	mass flux into Colby Lake	M cl =	171.2005 (mg/s)
	Average Flow		
	concentration in river at SW-001	C r1 =	0.05527 (mg/L)
	concentration in river at SW-002	C r2 =	0.05113 (mg/L)
	concentration in river at SW-003	C r3 =	0.05077 (mg/L)
	concentration in river at SW-004	C r4 =	0.05006 (mg/L)
	concentration in river at SW-004A	C r4A =	0.06004 (mg/L)
	concentration in river at SW-005	C r5 =	0.05441 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.05418 (mg/L)
	concentration in Colby Lake	C cl =	0.05260 (mg/L)

Partridge River Mass-Balance Model--Mine Site-Proposed Action

Case Parameter	Post-Closure Barium			
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0077 (mg/L)	
	concentration of surface water into SW-002	C s2 =	0.0077 (mg/L)	
	concentration of surface water into SW-003	C s3 =	0.0077 (mg/L)	
	concentration of surface water into SW-004	C s4 =	0.0077 (mg/L)	
	concentration of surface water into SW-004A	C s4A =	0.0077 (mg/L)	
	concentration of surface water into SW-005	C s5 =	0.0077 (mg/L)	
	concentration of surface water into USGS Gage	C s6 =	0.0077 (mg/L)	
	concentration of surface water into Colby Lake	C scl =	0.0077 (mg/L)	
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0077 (mg/L)	
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0050 (mg/L)	
	concentration of West Pit overflow	C sms =	0.0925 (mg/L)	
	concentration of ground water into SW-001	C g1 =	0.0219 (mg/L)	
	concentration of ground water into SW-002	C g2 =	0.0219 (mg/L)	
	concentration of ground water into SW-003	C g3 =	0.0219 (mg/L)	
	concentration of ground water into SW-004	C g4 =	0.0219 (mg/L)	
	concentration of ground water into SW-004A	C g4A =	0.0219 (mg/L)	
	concentration of ground water into SW-005	C g5 =	0.0219 (mg/L)	
	concentration of ground water into USGS Gage	C g6 =	0.0219 (mg/L)	
	concentration of ground water into Colby Lake	C gcl =	0.0219 (mg/L)	
	concentration of ground water seepage from East Pit	C gep =	0.0305 (mg/L)	
	concentration of ground water seepage from West Pit	C gwp =	0.0925 (mg/L)	
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	0.1900 (mg/L)	
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	0.1900 (mg/L)	
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.1900 (mg/L)	
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.1900 (mg/L)	
	concentration of liner leakage from LOSP	C gC4LO =	#N/A (mg/L)	
	concentration of seepage from Overburden (Storage)	C gOS =	#N/A (mg/L)	
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	0.0140 (mg/L)	
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	0.1900 (mg/L)	
	concentration of liner leakage from Cat 3 sumps	C gC3s =	0.1900 (mg/L)	
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.1900 (mg/L)	
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.1900 (mg/L)	
	concentration of liner leakage from LOSP sumps	C gC4LOs =	#N/A (mg/L)	
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0168 (mg/L)	
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)	
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0219 (mg/L)	
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0000 (mg/L)	
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0219 (mg/L)	
	concentration of liner leakage from WWTF ponc	C gWTFp =	#N/A (mg/L)	
			Average Flow	
	Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	0.98248 (mg/s)
mass flux of ground water into SW-001		M g1 =	0.11166 (mg/s)	
mass flux of surface discharges from upstream of PM-1		M sns =	0.14150 (mg/s)	
mass flux of surface water into SW-002		M s2 =	1.17796 (mg/s)	
mass flux of ground water into SW-002		M g2 =	0.16598 (mg/s)	
mass flux of surface water into SW-003		M s3 =	0.35654 (mg/s)	
mass flux of ground water into SW-003		M g3 =	0.06609 (mg/s)	
mass flux of seepage from East Pit to SW-003		M gep 003 =	0.00964 (mg/s)	
mass flux of liner leakage from Cat 3 stockpile to SW-003		M gC3 003 =	0.00016 (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-003		M gC3LO 003 =	0.00003 (mg/s)	
mass flux of liner leakage from Cat 3 sumps to SW-003		M gC3s 003 =	0.00000 (mg/s)	
mass flux of surface water into SW-004		M s4 =	1.34454 (mg/s)	
mass flux of ground water into SW-004		M g4 =	0.19360 (mg/s)	
mass flux of seepage from East Pit to SW-004		M gep 004 =	0.00964 (mg/s)	
mass flux of seepage from West Pit		M gwp =	0.10509 (mg/s)	
mass flux of liner leakage from Cat 3 stockpile to SW-004		M gC3 004 =	- (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-004		M gC3LO 004 =	0.00003 (mg/s)	
mass flux of liner leakage from Cat 4 stockpile		M gC4 =	0.00000 (mg/s)	
mass flux of liner leakage from LOSP		M gC4LO =	#N/A (mg/s)	
mass flux of seepage from Overburden (Storage)		M gOS =	#N/A (mg/s)	
mass flux of liner leakage from Cat 3LO sumps to SW-004		M gC3LOs 004 =	0.00000 (mg/s)	
mass flux of liner leakage from Cat 4 sumps		M gC4s =	0.00000 (mg/s)	
mass flux of liner leakage from LOSP sumps		M gC4LOs =	#N/A (mg/s)	
mass flux of seepage from Overburden Ponds - PW1		M gOp1 =	- (mg/s)	
mass flux of leakage from Haul Road Pond - PW2		M gHRp2 =	- (mg/s)	
mass flux of leakage from Haul Road Pond - PW4		M gHRp4 =	- (mg/s)	
mass flux of leakage from RTH Pond - PW3		M gRTHp =	- (mg/s)	
mass flux of liner leakage from WWTF pond		M gWTFp =	#N/A (mg/s)	
mass flux of surface water into SW-004A		M s4A =	5.14479 (mg/s)	
mass flux of ground water into SW-004A		M g4A =	0.85959 (mg/s)	
mass flux of West Pit overflow		M sms =	6.17848 (mg/s)	
mass flux of liner leakage from Cat 1/2 stockpile		M gC12 =	0.04543 (mg/s)	
mass flux of liner leakage from Cat 1/2 sumps		M gC12s =	0.00000 (mg/s)	
mass flux of seepage from Overburden (Cat 1/2)		M gO12 =	0.02487 (mg/s)	
mass flux of seepage from Overburden Pond - PW7		M gOp7 =	#N/A (mg/s)	
mass flux of surface water into SW-005		M s5 =	7.84315 (mg/s)	
mass flux of ground water into SW-005		M g5 =	1.40816 (mg/s)	
mass flux of surface water into USGS Gage		M s6 =	0.84316 (mg/s)	
mass flux of ground water into USGS Gage		M g6 =	0.29156 (mg/s)	
mass flux of surface water into Colby Lake		M scl =	5.12062 (mg/s)	
mass flux of ground water into Colby Lake		M gcl =	0.72579 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP		M shl =	0.08476 (mg/s)	
		Average Flow		
Mass balance at each node	mass flux in river at SW-001	M r1 =	1.2358 (mg/s)	
	mass flux in river at SW-002	M r2 =	2.5796 (mg/s)	
	mass flux in river at SW-003	M r3 =	3.0120 (mg/s)	
	mass flux in river at SW-004	M r4 =	4.6650 (mg/s)	
	mass flux in river at SW-004A	M r4A =	16.9181 (mg/s)	
	mass flux in river at SW-005	M r5 =	26.1694 (mg/s)	
	mass flux in river at USGS Gage	M r6 =	27.3041 (mg/s)	
mass flux into Colby Lake	M cl =	33.2353 (mg/s)		
		Average Flow		
Convert mass flux to concentration	concentration in river at SW-001	C r1 =	0.00766 (mg/L)	
	concentration in river at SW-002	C r2 =	0.00800 (mg/L)	
	concentration in river at SW-003	C r3 =	0.00810 (mg/L)	
	concentration in river at SW-004	C r4 =	0.00837 (mg/L)	
	concentration in river at SW-004A	C r4A =	0.01267 (mg/L)	
	concentration in river at SW-005	C r5 =	0.01081 (mg/L)	
	concentration in river at USGS Gage	C r6 =	0.01073 (mg/L)	
	concentration in Colby Lake	C cl =	0.01021 (mg/L)	

Partridge River Mass-Balance Model--Mine Site-Proposed Action

Case Parameter	Post-Closure Beryllium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0001 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0001 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0001 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0001 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0001 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0001 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0001 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0001 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0001 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0001 (mg/L)
	concentration of West Pit overflow	C_sms =	0.0007 (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0001 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0001 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0001 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0001 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0001 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0001 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0001 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0001 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.0001 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	0.0007 (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.0023 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0023 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0023 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.0023 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0023 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0023 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	- (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0001 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0000 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0001 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Average Flow			
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	0.01279 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00074 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.00283 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	0.01534 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.00110 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.00464 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00044 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.00004 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.01751 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.00128 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.00004 (mg/s)
	mass flux of ground water into SW-004	M_gwp =	0.00079 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	0.06699 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.00569 (mg/s)
	mass flux of West Pit overflow	M_sms =	0.04654 (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.00005 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	0.10212 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.00931 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.01098 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.00193 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	0.06667 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.00480 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00110 (mg/s)
Average Flow			
Mass balance at each node	mass flux in river at SW-001	M_r1 =	0.0164 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.0328 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.0379 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.0575 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.1768 (mg/s)
	mass flux in river at SW-005	M_r5 =	0.2882 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	0.3012 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	0.3737 (mg/s)
	concentration in river at SW-001	C_r1 =	0.00010 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00010 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00010 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00010 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00013 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00012 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00012 (mg/L)
	concentration in Colby Lake	C_cl =	0.00011 (mg/L)



Partridge River Mass-Balance Model--Mine Site-Proposed Action

Case Parameter	Post-Closure Calcium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	17.0000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	17.0000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	17.0000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	17.0000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	17.0000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	17.0000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	17.0000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	17.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	17.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	24.5000 (mg/L)
	concentration of West Pit overflow	C_sms =	98.8075 (mg/L)
	concentration of ground water into SW-001	C_g1 =	14.7900 (mg/L)
	concentration of ground water into SW-002	C_g2 =	14.7900 (mg/L)
	concentration of ground water into SW-003	C_g3 =	14.7900 (mg/L)
	concentration of ground water into SW-004	C_g4 =	14.7900 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	14.7900 (mg/L)
	concentration of ground water into SW-005	C_g5 =	14.7900 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	14.7900 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	14.7900 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	72.9548 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	98.8075 (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	435.9790 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	480.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	480.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	480.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	15.8000 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	435.9790 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	480.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	480.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	480.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	9.3700 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	14.7900 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0000 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	14.7900 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Average Flow			
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	2,174.76906 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	75.34026 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	693.35000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	2,607.46446 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	111.99140 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	789.22425 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	44.59378 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	23.02053 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.39827 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.08270 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00025 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	2,976.20551 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	130.62927 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	23.02053 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	112.24154 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.08270 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00397 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00047 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00022 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	11,388.21716 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	579.98463 (mg/s)
	mass flux of West Pit overflow	M_sms =	6,599.15360 (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	104.24342 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00955 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	28.06213 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	17,361.13359 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	950.12439 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	1,866.36871 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	196.72179 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	11,334.71600 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	489.71169 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	187.62900 (mg/s)
Average Flow			
Mass balance at each node	mass flux in river at SW-001	M_r1 =	2,943.4593 (mg/s)
	mass flux in river at SW-002	M_r2 =	5,662.9162 (mg/s)
	mass flux in river at SW-003	M_r3 =	6,520.2350 (mg/s)
	mass flux in river at SW-004	M_r4 =	9,762.4192 (mg/s)
	mass flux in river at SW-004A	M_r4A =	28,462.0897 (mg/s)
	mass flux in river at SW-005	M_r5 =	46,773.3476 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	48,836.4382 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	60,848.4948 (mg/s)
	Average Flow		
	concentration in river at SW-001	C_r1 =	18.24591 (mg/L)
	concentration in river at SW-002	C_r2 =	17.57174 (mg/L)
	concentration in river at SW-003	C_r3 =	17.52607 (mg/L)
	concentration in river at SW-004	C_r4 =	17.51466 (mg/L)
	concentration in river at SW-004A	C_r4A =	21.31515 (mg/L)
	concentration in river at SW-005	C_r5 =	19.32158 (mg/L)
	concentration in river at USGS Gage	C_r6 =	19.19769 (mg/L)
	concentration in Colby Lake	C_cl =	18.69520 (mg/L)

Partridge River Mass-Balance Model--Mine Site-Proposed Action

Case		Post-Closure	
Parameter		Cadmium	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0001 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0001 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0001 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0001 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0001 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0001 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0001 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0001 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0001 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0001 (mg/L)
	concentration of West Pit overflow	C_sms =	0.0002 (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0001 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0001 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0001 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0001 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0001 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0001 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0001 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0001 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.0001 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	0.0002 (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.0149 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0149 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0149 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.0149 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0149 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0149 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0001 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0001 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0000 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0001 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
		Average Flow	
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	0.01279 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00051 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.00283 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	0.01534 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.00076 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.00464 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00030 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.00003 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.01751 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.00088 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.00003 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	0.00017 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	0.06699 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.00392 (mg/s)
	mass flux of West Pit overflow	M_sms =	0.01007 (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.00004 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	0.10212 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.00642 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.01098 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.00133 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	0.06667 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.00331 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00110 (mg/s)
		Average Flow	
Mass balance at each node	mass flux in river at SW-001	M_r1 =	0.0161 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.0322 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.0372 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.0558 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.1368 (mg/s)
	mass flux in river at SW-005	M_r5 =	0.2454 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	0.2577 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	0.3288 (mg/s)
Convert mass flux to concentration	concentration in river at SW-001	C_r1 =	0.00010 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00010 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00010 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00010 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00010 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00010 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00010 (mg/L)
	concentration in Colby Lake	C_cl =	0.00010 (mg/L)

Partridge River Mass-Balance Model--Mine Site-Proposed Action

Case Parameter	Post-Closure Chloride		
Input concentration data	concentration of surface water into SW-001	C_s1 =	8.0000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	8.0000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	8.0000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	8.0000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	8.0000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	8.0000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	8.0000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	8.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	8.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	1.6000 (mg/L)
	concentration of West Pit overflow	C_sms =	21.3982 (mg/L)
	concentration of ground water into SW-001	C_g1 =	6.6000 (mg/L)
	concentration of ground water into SW-002	C_g2 =	6.6000 (mg/L)
	concentration of ground water into SW-003	C_g3 =	6.6000 (mg/L)
	concentration of ground water into SW-004	C_g4 =	6.6000 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	6.6000 (mg/L)
	concentration of ground water into SW-005	C_g5 =	6.6000 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	6.6000 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	6.6000 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	42.5489 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	21.3982 (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	- (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	- (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	- (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	- (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	2.3300 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	- (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	- (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	- (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	- (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	5.3500 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	6.6000 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0000 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	6.6000 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Average Flow			
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	1,023.42074 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	33.62040 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	45.28000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	1,227.04210 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	49.97588 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	371.39965 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	19.89986 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	13.42608 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	- (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	- (mg/s)
	mass flux of surface water into SW-004	M_s4 =	1,400.56730 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	58.29298 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	13.42608 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	24.30754 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	- (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	- (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	- (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	- (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	5,359.16102 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	258.81667 (mg/s)
	mass flux of West Pit overflow	M_sms =	1,429.14300 (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	- (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	4.13828 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	8,169.94522 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	423.99060 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	878.29116 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	87.78660 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	5,333.98400 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	218.53260 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	88.29600 (mg/s)
Average Flow			
Mass balance at each node	mass flux in river at SW-001	M_r1 =	1,102.3211 (mg/s)
	mass flux in river at SW-002	M_r2 =	2,379.3391 (mg/s)
	mass flux in river at SW-003	M_r3 =	2,784.0647 (mg/s)
	mass flux in river at SW-004	M_r4 =	4,280.6566 (mg/s)
	mass flux in river at SW-004A	M_r4A =	11,331.9176 (mg/s)
	mass flux in river at SW-005	M_r5 =	19,925.8534 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	20,891.9312 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	26,532.7438 (mg/s)
	concentration in river at SW-001	C_r1 =	6.83307 (mg/L)
	concentration in river at SW-002	C_r2 =	7.38297 (mg/L)
	concentration in river at SW-003	C_r3 =	7.48343 (mg/L)
	concentration in river at SW-004	C_r4 =	7.67989 (mg/L)
	concentration in river at SW-004A	C_r4A =	8.48643 (mg/L)
	concentration in river at SW-005	C_r5 =	8.23116 (mg/L)
	concentration in river at USGS Gage	C_r6 =	8.21266 (mg/L)
	concentration in Colby Lake	C_cl =	8.15197 (mg/L)

Partridge River Mass-Balance Model--Mine Site-Proposed Action

Case Parameter	Post-Closure Cobalt		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0005 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0005 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0005 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0005 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0005 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0005 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0005 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0005 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0005 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0005 (mg/L)
	concentration of West Pit overflow	C_sms =	0.0060 (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0017 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0017 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0017 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0017 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0017 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0017 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0017 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0017 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.0010 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	0.0060 (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0272 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	44.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	44.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	44.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0013 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0272 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	44.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	44.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	44.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0011 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0017 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0000 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0017 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Average Flow			
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	0.06396 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00841 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.01415 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	0.07669 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.01249 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.02321 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00497 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.00032 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.03651 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00758 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00002 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.08754 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.01457 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.00032 (mg/s)
	mass flux of ground water into SW-004	M_gwp =	0.00676 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00758 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00036 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00004 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00002 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	0.33495 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.06470 (mg/s)
	mass flux of West Pit overflow	M_sms =	0.39757 (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.00650 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.00231 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	0.51062 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.10600 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.05489 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.02195 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	0.33337 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.05463 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00552 (mg/s)
Average Flow			
Mass balance at each node	mass flux in river at SW-001	M_r1 =	0.0865 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.1757 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.2483 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.3655 (mg/s)
	mass flux in river at SW-004A	M_r4A =	1.1716 (mg/s)
	mass flux in river at SW-005	M_r5 =	1.7882 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	1.8650 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	2.2585 (mg/s)
	concentration in river at SW-001	C_r1 =	0.00054 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00055 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00067 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00066 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00088 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00074 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00073 (mg/L)
	concentration in Colby Lake	C_cl =	0.00069 (mg/L)

**Partridge River Mass-Balance Model--Mine Site-Proposed Action**

Case Parameter		Post-Closure Copper	
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0017 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0017 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0017 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0017 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0017 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0017 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0017 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0017 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shi =	0.0190 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0012 (mg/L)
	concentration of West Pit overflow	C sms =	0.0060 (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0030 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0030 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0030 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0030 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0030 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0030 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0030 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0030 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	0.0507 (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	0.0060 (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	0.0920 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	202.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	202.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	151.6343 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	0.0170 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	0.0920 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C gC3s =	202.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	202.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	151.6343 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0214 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0030 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0000 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0030 (mg/L)
	concentration of liner leakage from WWTF pond	C gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	0.21748 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.01503 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.03509 (mg/s)
	mass flux of surface water into SW-002	M s2 =	0.26075 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.02234 (mg/s)
	mass flux of surface water into SW-003	M s3 =	0.07892 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.00889 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	0.01600 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M gC3_003 =	0.16760 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.03480 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M gC3s_003 =	0.00011 (mg/s)
	mass flux of surface water into SW-004	M s4 =	0.29762 (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.02606 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	0.01600 (mg/s)
	mass flux of seepage from West Pit	M gwp =	0.00682 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.03480 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00125 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00020 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00007 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M s4A =	1.13882 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.11568 (mg/s)
	mass flux of West Pit overflow	M sms =	0.40073 (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M gC12 =	0.02200 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M gO12 =	0.03019 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	1.73611 (mg/s)
	mass flux of ground water into SW-005	M g5 =	0.18951 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	0.18664 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.03924 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	1.13347 (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	0.09768 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shi =	0.20970 (mg/s)
Mass balance at each node	Average Flow		
	mass flux in river at SW-001	M r1 =	0.2676 (mg/s)
	mass flux in river at SW-002	M r2 =	0.5507 (mg/s)
	mass flux in river at SW-003	M r3 =	0.8570 (mg/s)
	mass flux in river at SW-004	M r4 =	1.2398 (mg/s)
	mass flux in river at SW-004A	M r4A =	2.9473 (mg/s)
	mass flux in river at SW-005	M r5 =	4.8729 (mg/s)
	mass flux in river at USGS Gage	M r6 =	5.0988 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M cl =	6.5396 (mg/s)
	Average Flow		
	concentration in river at SW-001	C r1 =	0.00166 (mg/L)
	concentration in river at SW-002	C r2 =	0.00171 (mg/L)
	concentration in river at SW-003	C r3 =	0.00230 (mg/L)
	concentration in river at SW-004	C r4 =	0.00222 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00221 (mg/L)
	concentration in river at SW-005	C r5 =	0.00201 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00200 (mg/L)
	concentration in Colby Lake	C cl =	0.00201 (mg/L)

Partridge River Mass-Balance Model--Mine Site-Proposed Action

Case Parameter	Post-Closure Fluoride		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0700 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0700 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0700 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0700 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0700 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0700 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0700 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0700 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0700 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.1400 (mg/L)
	concentration of West Pit overflow	C sms =	2.2503 (mg/L)
	concentration of ground water into SW-001	C g1 =	0.2800 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.2800 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.2800 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.2800 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.2800 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.2800 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.2800 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.2800 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	5.3094 (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	2.2503 (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	0.0623 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	0.0622 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0622 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0622 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	0.4200 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	0.0623 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C gC3s =	0.0622 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.0622 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0622 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.2239 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.2800 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0000 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.2800 (mg/L)
	concentration of liner leakage from WWTF pond	C gWTFp =	#N/A (mg/L)

		Average Flow
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 = 8.95493 (mg/s)
	mass flux of ground water into SW-001	M g1 = 1.42632 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns = 3.96200 (mg/s)
	mass flux of surface water into SW-002	M s2 = 10.73662 (mg/s)
	mass flux of ground water into SW-002	M g2 = 2.12019 (mg/s)
	mass flux of surface water into SW-003	M s3 = 3.24975 (mg/s)
	mass flux of ground water into SW-003	M g3 = 0.84424 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 = 1.67536 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M gC3_003 = 0.00005 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 = 0.00001 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M gC3s_003 = 0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 = 12.25496 (mg/s)
	mass flux of ground water into SW-004	M g4 = 2.47304 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 = 1.67536 (mg/s)
	mass flux of seepage from West Pit	M gwp = 2.55625 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M gC3_004 = - (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_003 = 0.00001 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 = 0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO = #N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS = #N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_003 = 0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s = 0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs = #N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 = - (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 = - (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 = - (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp = - (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp = #N/A (mg/s)
	mass flux of surface water into SW-004A	M s4A = 46.89266 (mg/s)
	mass flux of ground water into SW-004A	M g4A = 10.98010 (mg/s)
	mass flux of West Pit overflow	M sms = 150.29272 (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M gC12 = 0.01489 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M gC12s = 0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M gO12 = 0.74596 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 = #N/A (mg/s)
	mass flux of surface water into SW-005	M s5 = 71.48702 (mg/s)
	mass flux of ground water into SW-005	M g5 = 17.98748 (mg/s)
	mass flux of surface water into USGS Gage	M s6 = 7.68505 (mg/s)
	mass flux of ground water into USGS Gage	M g6 = 3.72428 (mg/s)
	mass flux of surface water into Colby Lake	M scl = 46.67236 (mg/s)
	mass flux of ground water into Colby Lake	M gcl = 9.27108 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl = 0.77259 (mg/s)
		Average Flow
Mass balance at each node	mass flux in river at SW-001	M r1 = 14.3433 (mg/s)
	mass flux in river at SW-002	M r2 = 27.2001 (mg/s)
	mass flux in river at SW-003	M r3 = 32.9695 (mg/s)
	mass flux in river at SW-004	M r4 = 51.9291 (mg/s)
	mass flux in river at SW-004A	M r4A = 260.8554 (mg/s)
	mass flux in river at SW-005	M r5 = 350.3299 (mg/s)
	mass flux in river at USGS Gage	M r6 = 361.7392 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M cl = 418.4553 (mg/s)
		Average Flow
Convert mass flux to concentration	concentration in river at SW-001	C r1 = 0.08891 (mg/L)
	concentration in river at SW-002	C r2 = 0.08440 (mg/L)
	concentration in river at SW-003	C r3 = 0.08862 (mg/L)
	concentration in river at SW-004	C r4 = 0.09317 (mg/L)
	concentration in river at SW-004A	C r4A = 0.19535 (mg/L)
	concentration in river at SW-005	C r5 = 0.14472 (mg/L)
	concentration in river at USGS Gage	C r6 = 0.14220 (mg/L)
concentration in Colby Lake	C cl = 0.12857 (mg/L)	



Partridge River Mass-Balance Model--Mine Site-Proposed Action

Case Parameter	Post-Closure Iron		
Input concentration data	concentration of surface water into SW-001	C_s1 =	1.6000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	1.6000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	1.6000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	1.6000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	1.6000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	1.6000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	1.6000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	1.6000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	1.6000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0300 (mg/L)
	concentration of West Pit overflow	C_sms =	0.1000 (mg/L)
	concentration of ground water into SW-001	C_g1 =	2.8440 (mg/L)
	concentration of ground water into SW-002	C_g2 =	2.8440 (mg/L)
	concentration of ground water into SW-003	C_g3 =	2.8440 (mg/L)
	concentration of ground water into SW-004	C_g4 =	2.8440 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	2.8440 (mg/L)
	concentration of ground water into SW-005	C_g5 =	2.8440 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	2.8440 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	2.8440 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.8101 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	0.1000 (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.8100 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	235.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	235.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	235.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.1500 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.8100 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	235.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	235.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	235.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.2255 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	2.8440 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0000 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	2.8440 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Average Flow			
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	204.68415 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	14.48734 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.84900 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	245.40842 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	21.53506 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	74.27993 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	8.57503 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.25562 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.19499 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.04049 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00012 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	280.11346 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	25.11897 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.25562 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	0.11360 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.04049 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00194 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00023 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00011 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	1,071.83220 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	111.52646 (mg/s)
	mass flux of West Pit overflow	M_sms =	6.67880 (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.19367 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00002 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.26641 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	1,633.98904 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	182.70140 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	175.65823 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	37.82804 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	1,066.79680 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	94.16768 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	17,65920 (mg/s)
Average Flow			
Mass balance at each node	mass flux in river at SW-001	M_r1 =	220.0205 (mg/s)
	mass flux in river at SW-002	M_r2 =	486.9640 (mg/s)
	mass flux in river at SW-003	M_r3 =	570.3101 (mg/s)
	mass flux in river at SW-004	M_r4 =	875.9546 (mg/s)
	mass flux in river at SW-004A	M_r4A =	2,066.4521 (mg/s)
	mass flux in river at SW-005	M_r5 =	3,883.1426 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	4,096.6268 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	5,275.2525 (mg/s)
	Average Flow		
	concentration in river at SW-001	C_r1 =	1.36386 (mg/L)
	concentration in river at SW-002	C_r2 =	1.51102 (mg/L)
	concentration in river at SW-003	C_r3 =	1.53297 (mg/L)
	concentration in river at SW-004	C_r4 =	1.57154 (mg/L)
	concentration in river at SW-004A	C_r4A =	1.54756 (mg/L)
	concentration in river at SW-005	C_r5 =	1.60409 (mg/L)
	concentration in river at USGS Gage	C_r6 =	1.61039 (mg/L)
	concentration in Colby Lake	C_cl =	1.62078 (mg/L)

Partridge River Mass-Balance Model--Mine Site-Proposed Action

Case Parameter	Post-Closure Hardness		
Input concentration data	concentration of surface water into SW-001	C_s1 =	110.0000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	110.0000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	110.0000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	110.0000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	110.0000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	110.0000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	110.0000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	110.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	110.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	110.0000 (mg/L)
	concentration of West Pit overflow	C_sms =	330.7443 (mg/L)
	concentration of ground water into SW-001	C_g1 =	66.4200 (mg/L)
	concentration of ground water into SW-002	C_g2 =	66.4200 (mg/L)
	concentration of ground water into SW-003	C_g3 =	66.4200 (mg/L)
	concentration of ground water into SW-004	C_g4 =	66.4200 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	66.4200 (mg/L)
	concentration of ground water into SW-005	C_g5 =	66.4200 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	66.4200 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	66.4200 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	250.3589 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	330.7443 (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	1,412.9373 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	5,435.6906 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	5,435.6906 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	5,435.6906 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	71.5000 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	1,412.9373 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	5,435.6906 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	5,435.6906 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	5,435.6906 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	43.5200 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	66.4200 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0000 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	66.4200 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	Average Flow		
	mass flux of surface water into SW-001	M_s1 =	14,072.03511 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	338.34348 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	3,113.00000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	16,871.82888 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	502.93907 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	5,106.74517 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	200.26497 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	78.99950 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	4.51014 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.93657 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00286 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	19,257.80034 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	586.63934 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	78.99950 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	375.71294 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.93657 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.04490 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00534 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00248 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	73,688.46397 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	2,604.63688 (mg/s)
	mass flux of West Pit overflow	M_sms =	22,089.74910 (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	337.83603 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.03096 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	126.99004 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	112,336.74676 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	4,266.88722 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	12,076.50345 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	883.45242 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	73,342.28000 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	2,199.23262 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	1,214.07000 (mg/s)
Mass balance at each node	Average Flow		
	mass flux in river at SW-001	M_r1 =	17,523.3788 (mg/s)
	mass flux in river at SW-002	M_r2 =	34,898.1465 (mg/s)
	mass flux in river at SW-003	M_r3 =	40,289.6057 (mg/s)
	mass flux in river at SW-004	M_r4 =	60,589.7472 (mg/s)
	mass flux in river at SW-004A	M_r4A =	159,437.4541 (mg/s)
	mass flux in river at SW-005	M_r5 =	276,041.0861 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	289,001.0440 (mg/s)
	mass flux into Colby Lake	M_cl =	365,756.6266 (mg/s)
	Average Flow		
	concentration in river at SW-001	C_r1 =	108.62389 (mg/L)
	concentration in river at SW-002	C_r2 =	108.28721 (mg/L)
	concentration in river at SW-003	C_r3 =	108.29649 (mg/L)
	concentration in river at SW-004	C_r4 =	108.70349 (mg/L)
	concentration in river at SW-004A	C_r4A =	119.40211 (mg/L)
	concentration in river at SW-005	C_r5 =	114.02969 (mg/L)
	concentration in river at USGS Gage	C_r6 =	113.60885 (mg/L)
	concentration in Colby Lake	C_cl =	112.37571 (mg/L)

Partridge River Mass-Balance Model--Mine Site-Proposed Action

Case Parameter	Post-Closure Potassium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	1.3000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	1.3000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	1.3000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	1.3000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	1.3000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	1.3000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	1.3000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	1.3000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	1.3000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	2.7000 (mg/L)
	concentration of West Pit overflow	C_sms =	17.1987 (mg/L)
	concentration of ground water into SW-001	C_g1 =	1.7500 (mg/L)
	concentration of ground water into SW-002	C_g2 =	1.7500 (mg/L)
	concentration of ground water into SW-003	C_g3 =	1.7500 (mg/L)
	concentration of ground water into SW-004	C_g4 =	1.7500 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	1.7500 (mg/L)
	concentration of ground water into SW-005	C_g5 =	1.7500 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	1.7500 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	1.7500 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	12.2221 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	17.1987 (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	49.0000 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	38.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	38.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	38.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	4.4500 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	49.0000 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	38.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	38.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	38.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	2.2600 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	1.7500 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0000 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	1.7500 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Average Flow			
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	166.30587 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	8.91450 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	76.41000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	199.39434 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	13.25118 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	60.35244 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	5.27648 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	3.85663 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.03153 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00655 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00002 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	227.59219 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	15.45647 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	3.85663 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	19.53712 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00655 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00031 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00004 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00002 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	870.86367 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	68.62563 (mg/s)
	mass flux of West Pit overflow	M_sms =	1,148.66994 (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	11.71599 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00107 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	7.90358 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	1,327.61610 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	112.42175 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	142.72231 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	23.27675 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	866.77240 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	57.94425 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	14.34810 (mg/s)
Average Flow			
Mass balance at each node	mass flux in river at SW-001	M_r1 =	251.6304 (mg/s)
	mass flux in river at SW-002	M_r2 =	464.2759 (mg/s)
	mass flux in river at SW-003	M_r3 =	533.7995 (mg/s)
	mass flux in river at SW-004	M_r4 =	800.2489 (mg/s)
	mass flux in river at SW-004A	M_r4A =	2,908.0288 (mg/s)
	mass flux in river at SW-005	M_r5 =	4,348.0666 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	4,514.0657 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	5,453.1304 (mg/s)
	concentration in river at SW-001	C_r1 =	1.55981 (mg/L)
	concentration in river at SW-002	C_r2 =	1.44062 (mg/L)
	concentration in river at SW-003	C_r3 =	1.43483 (mg/L)
	concentration in river at SW-004	C_r4 =	1.43572 (mg/L)
	concentration in river at SW-004A	C_r4A =	2.17781 (mg/L)
	concentration in river at SW-005	C_r5 =	1.79614 (mg/L)
	concentration in river at USGS Gage	C_r6 =	1.77449 (mg/L)
	concentration in Colby Lake	C_cl =	1.67543 (mg/L)

Partridge River Mass-Balance Model--Mine Site-Proposed Action

Case Parameter	Post-Closure Magnesium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	8.0000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	8.0000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	8.0000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	8.0000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	8.0000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	8.0000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	8.0000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	8.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	8.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	10.5000 (mg/L)
	concentration of West Pit overflow	C_sms =	20.4950 (mg/L)
	concentration of ground water into SW-001	C_g1 =	8.0200 (mg/L)
	concentration of ground water into SW-002	C_g2 =	8.0200 (mg/L)
	concentration of ground water into SW-003	C_g3 =	8.0200 (mg/L)
	concentration of ground water into SW-004	C_g4 =	8.0200 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	8.0200 (mg/L)
	concentration of ground water into SW-005	C_g5 =	8.0200 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	8.0200 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	8.0200 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	16.5862 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	20.4950 (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	79.1470 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	1,030.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	1,030.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	1,030.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	9.0100 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	79.1470 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	1,030.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	1,030.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	1,030.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	4.8800 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	8.0200 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0000 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	8.0200 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Average Flow			
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	1,023.42074 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	40.85388 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	297.15000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	1,227.04210 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	60.72826 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	371.39965 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	24.18135 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	5.23370 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.85462 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.17747 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00054 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	1,400.56730 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	70.83480 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	5.23370 (mg/s)
	mass flux of ground water into SW-004	M_gwp =	23.28155 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.17747 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00851 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00101 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00047 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	5,359.16102 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	314.50147 (mg/s)
	mass flux of West Pit overflow	M_sms =	1,368.82069 (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	18.92421 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00173 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	16.00252 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	8,169.94522 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	515.21282 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	878.29116 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	106.67402 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	5,333.98400 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	265.55022 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	88.29600 (mg/s)
Average Flow			
Mass balance at each node	mass flux in river at SW-001	M_r1 =	1,361.4248 (mg/s)
	mass flux in river at SW-002	M_r2 =	2,649.1950 (mg/s)
	mass flux in river at SW-003	M_r3 =	3,051.0423 (mg/s)
	mass flux in river at SW-004	M_r4 =	4,551.1471 (mg/s)
	mass flux in river at SW-004A	M_r4A =	11,628.5588 (mg/s)
	mass flux in river at SW-005	M_r5 =	20,313.7168 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	21,298.6820 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	26,986.5122 (mg/s)
	concentration in river at SW-001	C_r1 =	8.43920 (mg/L)
	concentration in river at SW-002	C_r2 =	8.22032 (mg/L)
	concentration in river at SW-003	C_r3 =	8.20105 (mg/L)
	concentration in river at SW-004	C_r4 =	8.16517 (mg/L)
	concentration in river at SW-004A	C_r4A =	8.70858 (mg/L)
	concentration in river at SW-005	C_r5 =	8.39138 (mg/L)
	concentration in river at USGS Gage	C_r6 =	8.37255 (mg/L)
	concentration in Colby Lake	C_cl =	8.29138 (mg/L)

Partridge River Mass-Balance Model--Mine Site-Proposed Action

Case Parameter	Post-Closure Manganese		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.1500 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.1500 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.1500 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.1500 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.1500 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.1500 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.1500 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.1500 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.1500 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0086 (mg/L)
	concentration of West Pit overflow	C_sms =	0.0100 (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.1240 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.1240 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.1240 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.1240 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.1240 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.1240 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.1240 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.1240 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.1461 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	0.0100 (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.5937 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	47.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	47.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	47.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.1160 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.5937 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	47.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	47.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	47.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.1604 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.1240 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0000 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.1240 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Average Flow			
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	19.18914 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.63166 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.24338 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	23.00704 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.93894 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	6.96374 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.37388 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.04609 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.03900 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00810 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00002 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	26.26064 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	1.09520 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.04609 (mg/s)
	mass flux of ground water into SW-004	M_gwp =	0.01136 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00810 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00039 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00005 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00002 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	100.48427 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	4.86262 (mg/s)
	mass flux of West Pit overflow	M_sms =	0.66788 (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.14197 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.20603 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	153.18647 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	7.96588 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	16.46796 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	1.64932 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	100.01220 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	4.10576 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	1.65555 (mg/s)
Average Flow			
Mass balance at each node	mass flux in river at SW-001	M_r1 =	20.0642 (mg/s)
	mass flux in river at SW-002	M_r2 =	44.0102 (mg/s)
	mass flux in river at SW-003	M_r3 =	51.4410 (mg/s)
	mass flux in river at SW-004	M_r4 =	78.8628 (mg/s)
	mass flux in river at SW-004A	M_r4A =	155.2256 (mg/s)
	mass flux in river at SW-005	M_r5 =	346.3780 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	364.4952 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	470.2688 (mg/s)
	Average Flow		
	concentration in river at SW-001	C_r1 =	0.12437 (mg/L)
	concentration in river at SW-002	C_r2 =	0.13656 (mg/L)
	concentration in river at SW-003	C_r3 =	0.13827 (mg/L)
	concentration in river at SW-004	C_r4 =	0.14149 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.13871 (mg/L)
	concentration in river at SW-005	C_r5 =	0.14309 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.14328 (mg/L)
	concentration in Colby Lake	C_cl =	0.14449 (mg/L)



Partridge River Mass-Balance Model--Mine Site-Proposed Action

Case Parameter	Post-Closure Sodium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	2.5000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	2.5000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	2.5000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	2.5000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	2.5000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	2.5000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	2.5000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	2.5000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	2.5000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	4.8000 (mg/L)
	concentration of West Pit overflow	C_sms =	220.0296 (mg/L)
	concentration of ground water into SW-001	C_g1 =	13.3300 (mg/L)
	concentration of ground water into SW-002	C_g2 =	13.3300 (mg/L)
	concentration of ground water into SW-003	C_g3 =	13.3300 (mg/L)
	concentration of ground water into SW-004	C_g4 =	13.3300 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	13.3300 (mg/L)
	concentration of ground water into SW-005	C_g5 =	13.3300 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	13.3300 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	13.3300 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	353.8704 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	220.0296 (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	443.6984 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	338.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	338.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	338.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	7.1900 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	443.6984 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	338.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	338.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	338.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	4.6000 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	13.3300 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0000 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	13.3300 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Average Flow			
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	319.81898 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	67.90302 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	135.84000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	383.45066 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	100.93613 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	116.06239 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	40.19169 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	111.66204 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.28045 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.05824 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00018 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	437.67728 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	117.73415 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	111.66204 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	249.94531 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.05824 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00279 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00033 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00015 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	1,674.73782 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	522.73125 (mg/s)
	mass flux of West Pit overflow	M_sms =	14,695.33955 (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	106.08914 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00972 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	12.77005 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	2,553.10788 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	856.33253 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	274.46599 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	177.30233 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	1,666.87000 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	441.36963 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	27.59250 (mg/s)
Average Flow			
Mass balance at each node	mass flux in river at SW-001	M_r1 =	523.5620 (mg/s)
	mass flux in river at SW-002	M_r2 =	1,007.9468 (mg/s)
	mass flux in river at SW-003	M_r3 =	1,276.2038 (mg/s)
	mass flux in river at SW-004	M_r4 =	2,193.2841 (mg/s)
	mass flux in river at SW-004A	M_r4A =	19,204.9616 (mg/s)
	mass flux in river at SW-005	M_r5 =	22,614.4020 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	23,066.1703 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	25,202.0025 (mg/s)
	Average Flow		
	concentration in river at SW-001	C_r1 =	3.24546 (mg/L)
	concentration in river at SW-002	C_r2 =	3.12761 (mg/L)
	concentration in river at SW-003	C_r3 =	3.43037 (mg/L)
	concentration in river at SW-004	C_r4 =	3.93495 (mg/L)
	concentration in river at SW-004A	C_r4A =	14.38252 (mg/L)
	concentration in river at SW-005	C_r5 =	9.34177 (mg/L)
	concentration in river at USGS Gage	C_r6 =	9.06735 (mg/L)
	concentration in Colby Lake	C_cl =	7.74311 (mg/L)



Partridge River Mass-Balance Model--Mine Site-Proposed Action

Case Parameter	Post-Closure Nickel		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0016 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0016 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0016 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0016 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0016 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0016 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0016 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0016 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0033 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0016 (mg/L)
	concentration of West Pit overflow	C_sms =	0.0541 (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0163 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0163 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0163 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0163 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0163 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0163 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0163 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0163 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.0086 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	0.0541 (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.1762 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	762.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	762.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	762.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0190 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.1762 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	762.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	762.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	762.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0080 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0163 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0000 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0163 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Average Flow			
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	0.19957 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.08293 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.04387 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	0.23927 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.12327 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.07242 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.04909 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.00270 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.63225 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.13129 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00040 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.27311 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.14379 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.00270 (mg/s)
	mass flux of ground water into SW-004	M_gwp =	0.06147 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.13129 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00629 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00075 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00035 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	1.04504 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.63841 (mg/s)
	mass flux of West Pit overflow	M_sms =	3.61405 (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.04213 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.03375 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	1.59314 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	1.04584 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.17127 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.21654 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	1.04013 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.53905 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.03642 (mg/s)
Average Flow			
Mass balance at each node	mass flux in river at SW-001	M_r1 =	0.3264 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.6889 (mg/s)
	mass flux in river at SW-003	M_r3 =	1.5771 (mg/s)
	mass flux in river at SW-004	M_r4 =	2.1968 (mg/s)
	mass flux in river at SW-004A	M_r4A =	7.5702 (mg/s)
	mass flux in river at SW-005	M_r5 =	10.2092 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	10.5970 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	12.2126 (mg/s)
	concentration in river at SW-001	C_r1 =	0.00202 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00214 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00424 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00394 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00567 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00422 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00417 (mg/L)
	concentration in Colby Lake	C_cl =	0.00375 (mg/L)

Partridge River Mass-Balance Model--Mine Site-Proposed Action

Case Parameter	Post-Closure Lead		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0005 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0005 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0005 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0005 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0005 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0005 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0005 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0005 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0005 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0002 (mg/L)
	concentration of West Pit overflow	C_sms =	0.0052 (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0011 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0011 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0011 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0011 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0011 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0011 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0011 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0011 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.0049 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	0.0052 (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0210 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.0528 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0528 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0528 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0210 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.0528 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0528 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0528 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0007 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0011 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0000 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0011 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Average Flow			
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	0.06396 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00571 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.00425 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	0.07669 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.00848 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.02321 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00338 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.00156 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00004 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.08754 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.00989 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.00156 (mg/s)
	mass flux of ground water into SW-004	M_gwp =	0.00590 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	0.33495 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.04392 (mg/s)
	mass flux of West Pit overflow	M_sms =	0.34696 (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.00503 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	0.51062 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.07195 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.05489 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.01490 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	0.33337 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.03708 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00552 (mg/s)
Average Flow			
Mass balance at each node	mass flux in river at SW-001	M_r1 =	0.0739 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.1591 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.1873 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.2922 (mg/s)
	mass flux in river at SW-004A	M_r4A =	1.0230 (mg/s)
	mass flux in river at SW-005	M_r5 =	1.6056 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	1.6754 (mg/s)
	mass flux into Colby Lake	M_cl =	2.0514 (mg/s)
Average Flow			
Convert mass flux to concentration	concentration in river at SW-001	C_r1 =	0.00046 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00049 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00050 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00052 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00077 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00066 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00066 (mg/L)
	concentration in Colby Lake	C_cl =	0.00063 (mg/L)

Partridge River Mass-Balance Model--Mine Site-Proposed Action

Case Parameter	Post-Closure Antimony		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0015 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0015 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0015 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0015 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0015 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0015 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0015 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0015 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0015 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0015 (mg/L)
	concentration of West Pit overflow	C_sms =	0.1064 (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0015 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0015 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0015 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0015 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0015 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0015 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0015 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0015 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.0213 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	0.1064 (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0800 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.0800 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0800 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0800 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0004 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0800 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.0800 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0800 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0800 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0003 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0015 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0000 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0015 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Average Flow			
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	0.19189 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00764 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.04245 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	0.23007 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.01136 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.06964 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00452 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.00673 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00007 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.26261 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.01325 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.00673 (mg/s)
	mass flux of ground water into West Pit	M_gwp =	0.12083 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	1.00484 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.05882 (mg/s)
	mass flux of West Pit overflow	M_sms =	7.10430 (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.01913 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.00071 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	1.53186 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.09636 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.16468 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.01995 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	1.00012 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.04967 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.01656 (mg/s)
Average Flow			
Mass balance at each node	mass flux in river at SW-001	M_r1 =	0.2420 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.4834 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.5644 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.9678 (mg/s)
	mass flux in river at SW-004A	M_r4A =	9.1556 (mg/s)
	mass flux in river at SW-005	M_r5 =	10.7838 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	10.9685 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	12.0348 (mg/s)
	concentration in river at SW-001	C_r1 =	0.00150 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00150 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00152 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00174 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00686 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00445 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00431 (mg/L)
	concentration in Colby Lake	C_cl =	0.00370 (mg/L)

Partridge River Mass-Balance Model--Mine Site-Proposed Action

Case Parameter	Post-Closure Selenium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0005 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0005 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0005 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0005 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0005 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0005 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0005 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0005 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0005 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0005 (mg/L)
	concentration of West Pit overflow	C_sms =	0.0077 (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0019 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0019 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0019 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0019 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0019 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0019 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0019 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0019 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.0111 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	0.0077 (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0029 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.0029 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0029 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0029 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0019 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0029 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.0029 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0029 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0029 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0004 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0019 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0000 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0019 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Average Flow			
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	0.06396 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00973 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.01415 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	0.07669 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.01446 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.02321 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00576 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.00351 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.08754 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.01687 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.00351 (mg/s)
	mass flux of ground water into West Pit	M_gwp =	0.00880 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	0.33495 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.07490 (mg/s)
	mass flux of West Pit overflow	M_sms =	0.51715 (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.00069 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.00337 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	0.51062 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.12270 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.05489 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.02540 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	0.33337 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.06324 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00552 (mg/s)
Average Flow			
Mass balance at each node	mass flux in river at SW-001	M_r1 =	0.0878 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.1790 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.2115 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.3282 (mg/s)
	mass flux in river at SW-004A	M_r4A =	1.2593 (mg/s)
	mass flux in river at SW-005	M_r5 =	1.8926 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	1.9729 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	2.3750 (mg/s)
	concentration in river at SW-001	C_r1 =	0.00054 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00056 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00057 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00059 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00094 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00078 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00078 (mg/L)
	concentration in Colby Lake	C_cl =	0.00073 (mg/L)

Partridge River Mass-Balance Model--Mine Site-Proposed Action

Case Parameter	Post-Closure Sulfate		
Input concentration data	concentration of surface water into SW-001	C_s1 =	9.0000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	9.0000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	9.0000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	9.0000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	9.0000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	9.0000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	9.0000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	9.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	9.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	22.0000 (mg/L)
	concentration of West Pit overflow	C_sms =	173.2649 (mg/L)
	concentration of ground water into SW-001	C_g1 =	16.1300 (mg/L)
	concentration of ground water into SW-002	C_g2 =	16.1300 (mg/L)
	concentration of ground water into SW-003	C_g3 =	16.1300 (mg/L)
	concentration of ground water into SW-004	C_g4 =	16.1300 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	16.1300 (mg/L)
	concentration of ground water into SW-005	C_g5 =	16.1300 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	16.1300 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	16.1300 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	132.4250 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	173.2649 (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	980.8782 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	9,600.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	9,600.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	9,600.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	68.3000 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	980.8782 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	9,600.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	9,600.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	9,600.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	35.1700 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	16.1300 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0000 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	16.1300 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	Average Flow		
	mass flux of surface water into SW-001	M_s1 =	1,151.34833 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	82.16622 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	622.60000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	1,380.42236 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	122.13802 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	417.82460 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	48.63406 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	41.78604 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	7.96537 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	1.65408 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00505 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	1,575.63821 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	142.46451 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	41.78604 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	196.82235 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	1.65408 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.07930 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00942 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00438 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	6,029.05614 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	632.53226 (mg/s)
	mass flux of West Pit overflow	M_sms =	11,572.01652 (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	234.52986 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.02149 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	121.30657 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	9,191.18837 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	1,036.20733 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	988.07755 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	214.54513 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	6,000.73200 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	534.08043 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	99.33300 (mg/s)
Mass balance at each node	Average Flow		
	mass flux in river at SW-001	M_r1 =	1,856.1145 (mg/s)
	mass flux in river at SW-002	M_r2 =	3,358.6749 (mg/s)
	mass flux in river at SW-003	M_r3 =	3,876.5441 (mg/s)
	mass flux in river at SW-004	M_r4 =	5,835.0024 (mg/s)
	mass flux in river at SW-004A	M_r4A =	24,424.4653 (mg/s)
	mass flux in river at SW-005	M_r5 =	34,651.8610 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	35,854.4837 (mg/s)
	mass flux into Colby Lake	M_cl =	42,488.6291 (mg/s)
	Average Flow		
	concentration in river at SW-001	C_r1 =	11.50568 (mg/L)
	concentration in river at SW-002	C_r2 =	10.42180 (mg/L)
	concentration in river at SW-003	C_r3 =	10.41996 (mg/L)
	concentration in river at SW-004	C_r4 =	10.46852 (mg/L)
	concentration in river at SW-004A	C_r4A =	18.29139 (mg/L)
	concentration in river at SW-005	C_r5 =	14.31432 (mg/L)
	concentration in river at USGS Gage	C_r6 =	14.09446 (mg/L)
	concentration in Colby Lake	C_cl =	13.05428 (mg/L)



Partridge River Mass-Balance Model--Mine Site-Proposed Action

Case Parameter	Post-Closure Thallium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0004 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0004 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0004 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0004 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0004 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0004 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0004 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0004 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0004 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0003 (mg/L)
	concentration of West Pit overflow	C_sms =	0.0002 (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0000 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0000 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0000 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0000 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0000 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0000 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0000 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0000 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.0002 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	0.0002 (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0000 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.0001 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0001 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0001 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0000 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.0001 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0001 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0001 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0000 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0000 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0000 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0000 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Average Flow			
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	0.05117 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00002 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.00809 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	0.06135 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.00003 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.01857 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00001 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.00007 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.07003 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.00004 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.00007 (mg/s)
	mass flux of liner leakage from West Pit	M_gwp =	0.00028 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	0.26796 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.00016 (mg/s)
	mass flux of West Pit overflow	M_sms =	0.01667 (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	0.40850 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.00026 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.04391 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.00005 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	0.26670 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.00013 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00441 (mg/s)
Average Flow			
Mass balance at each node	mass flux in river at SW-001	M_r1 =	0.0593 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.1207 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.1393 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.2097 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.4945 (mg/s)
	mass flux in river at SW-005	M_r5 =	0.9033 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	0.9473 (mg/s)
	mass flux into Colby Lake	M_cl =	1.2185 (mg/s)
Average Flow			
Convert mass flux to concentration	concentration in river at SW-001	C_r1 =	0.00037 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00037 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00037 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00038 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00037 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00037 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00037 (mg/L)
	concentration in Colby Lake	C_cl =	0.00037 (mg/L)



Partridge River Mass-Balance Model--Mine Site-Proposed Action

Case Parameter	Post-Closure Vanadium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0009 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0009 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0009 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0009 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0009 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0009 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0009 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0009 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0009 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0043 (mg/L)
	concentration of West Pit overflow	C_sms =	0.0602 (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0043 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0043 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0043 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0043 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0043 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0043 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0043 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0043 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.0254 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	0.0602 (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.6497 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	10.2217 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	12.7656 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	2.0895 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0014 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.6497 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	10.2217 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	12.7656 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	2.0895 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0017 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0043 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0043 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0043 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	Average Flow		
	mass flux of surface water into SW-001	M_s1 =	0.11513 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.02190 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.12169 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	0.13804 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.03256 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.04178 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.01297 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.00800 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00848 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00220 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00001 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.15756 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.03798 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.00800 (mg/s)
	mass flux of ground water into SW-004	M_gwp =	0.06841 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00220 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00002 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	0.60291 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.16862 (mg/s)
	mass flux of West Pit overflow	M_sms =	4.02203 (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.15533 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.00249 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	0.91912 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.27624 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.09881 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.05719 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	0.60007 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.14238 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00993 (mg/s)
Mass balance at each node	Average Flow		
	mass flux in river at SW-001	M_r1 =	0.2587 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.4293 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.5028 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.7769 (mg/s)
	mass flux in river at SW-004A	M_r4A =	5.7283 (mg/s)
	mass flux in river at SW-005	M_r5 =	6.9237 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	7.0797 (mg/s)
	mass flux into Colby Lake	M_cl =	7.8321 (mg/s)
	Average Flow		
	concentration in river at SW-001	C_r1 =	0.00160 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00133 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00135 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00139 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00429 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00286 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00278 (mg/L)
	concentration in Colby Lake	C_cl =	0.00241 (mg/L)

Partridge River Mass-Balance Model--Mine Site-Proposed Action

Case Parameter	Post-Closure Zinc		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0160 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0160 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0160 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0160 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0160 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0160 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0160 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0160 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0620 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0073 (mg/L)
	concentration of West Pit overflow	C_sms =	0.0435 (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0275 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0275 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0275 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0275 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0275 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0275 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0275 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0275 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.0228 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	0.0435 (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0900 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	26.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	26.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	26.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0030 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0900 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	26.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	26.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	26.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0046 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0275 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0000 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0275 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Average Flow			
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	2.04684 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.14009 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.20744 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	2.45408 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.20823 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.74280 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.08292 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.00720 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.02157 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00448 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00001 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	2.80113 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.24289 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.00720 (mg/s)
	mass flux of liner leakage from West Pit	M_gwp =	0.04941 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00448 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00021 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00003 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00001 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	10.71832 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	1.07840 (mg/s)
	mass flux of West Pit overflow	M_sms =	2.90473 (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.02152 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.00533 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	16.33989 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	1.76663 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	1.75658 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.36578 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	10.66797 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.91055 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.68429 (mg/s)
Average Flow			
Mass balance at each node	mass flux in river at SW-001	M_r1 =	2.3944 (mg/s)
	mass flux in river at SW-002	M_r2 =	5.0567 (mg/s)
	mass flux in river at SW-003	M_r3 =	5.9157 (mg/s)
	mass flux in river at SW-004	M_r4 =	9.0210 (mg/s)
	mass flux in river at SW-004A	M_r4A =	23.7493 (mg/s)
	mass flux in river at SW-005	M_r5 =	41.8559 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	43.9762 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	56.2410 (mg/s)
	concentration in river at SW-001	C_r1 =	0.01484 (mg/L)
	concentration in river at SW-002	C_r2 =	0.01569 (mg/L)
	concentration in river at SW-003	C_r3 =	0.01590 (mg/L)
	concentration in river at SW-004	C_r4 =	0.01618 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.01779 (mg/L)
	concentration in river at SW-005	C_r5 =	0.01729 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.01729 (mg/L)
	concentration in Colby Lake	C_cl =	0.01728 (mg/L)

## FLOWS

Case Flow	Post-Closure High Flow Conditions			
Total flow in Partridge River	flow in river at SW-001	Q_r1_H =	85.35	(cfs)
	flow in river at SW-002	Q_r2_H =	174.33	(cfs)
	flow in river at SW-003	Q_r3_H =	231.90	(cfs)
	flow in river at SW-004	Q_r4_H =	294.31	(cfs)
	flow in river at SW-004A	Q_r4a_H =	1,007.71	(cfs)
	flow in river at SW-005	Q_r5_H =	1,144.18	(cfs)
	flow in river at USGS Gage	Q_r6_H =	1,143.34	(cfs)
	total flow into Colby Lake	Q_cl_H =	1,480.87	(cfs)
	flow check	Q_ck_H =	1,480.87	(cfs)
Input flow data	surface water flow into SW-001	Q_s1_H =	84.17	(cfs)
	surface water flow into SW-002	Q_s2_H =	88.71	(cfs)
	surface water flow into SW-003	Q_s3_H =	57.45	(cfs)
	surface water flow into SW-004	Q_s4_H =	62.06	(cfs)
	surface water flow into SW-004A	Q_s4a_H =	697.62	(cfs)
	surface water flow into SW-005	Q_s5_H =	134.20	(cfs)
	surface water flow into USGS Gage	Q_s6_H =	(1.31)	(cfs)
	surface water flow into Colby Lake	Q_scl_H =	335.97	(cfs)
	surface water inflow from Hoyt Lakes WWTP	Q_shl_H =	0.39	(cfs)
	surface water inflow from discharges upstream of PM-1	Q_sns_H =	1.00	(cfs)
	surface water flow from West Pit overflow	Q_sms_H =	14.20	(cfs)
	ground water flow into SW-001	Q_g1_H =	0.18	(cfs)
	ground water flow into SW-002	Q_g2_H =	0.27	(cfs)
	ground water flow into SW-003	Q_g3_H =	0.11	(cfs)
	ground water flow into SW-004	Q_g4_H =	0.31	(cfs)
	ground water flow into SW-004A	Q_g4a_H =	1.39	(cfs)
	ground water flow into SW-005	Q_g5_H =	2.27	(cfs)
	ground water flow into USGS Gage	Q_g6_H =	0.47	(cfs)
	ground water flow into Colby Lake	Q_gcl_H =	1.17	(cfs)
	ground water seepage from East Pit to SW-003	Q_gep_003_H =	0.0112	(cfs)
	ground water seepage from East Pit to SW-004	Q_gep_004_H =	0.0112	(cfs)
	ground water seepage from West Pit	Q_gwp_H =	0.04	(cfs)
	ground water liner leakage from Cat 1/2 stockpile	Q_gC12_H =	0.0225	(cfs)
	ground water liner leakage from Cat 3 stockpile to SW-003	Q_gC3_003_H =	0.0002	(cfs)
	ground water liner leakage from Cat 3 stockpile to SW-004	Q_gC3_004_H =	-	(cfs)
	ground water liner leakage from Cat 3LO stockpile to SW-003	Q_gC3LO_003_H =	0.0002	(cfs)
	ground water liner leakage from Cat 3LO stockpile to SW-004	Q_gC3LO_004_H =	0.0002	(cfs)
	ground water liner leakage from Cat 4 stockpile	Q_gC4_H =	0.0000	(cfs)
	ground water liner leakage from LO SP	Q_gC4LO_H =	-	(cfs)
	ground water seepage from Overburden Storage	Q_gOS_H =	-	(cfs)
	ground water seepage from Overburden (Cat 1/2)	Q_gO12_H =	0.1674	(cfs)
	ground water liner leakage from Cat 1/2 sumps	Q_gC12s_H =	0.0000	(cfs)
	ground water liner leakage from Cat 3 sumps	Q_gC3s_H =	0.0000	(cfs)
	ground water liner leakage from Cat 3LO sumps	Q_gC3LOs_H =	0.0000	(cfs)
	ground water liner leakage from Cat 4 sumps	Q_gC4s_H =	0.0000	(cfs)
	ground water liner leakage from LO SP sumps	Q_gC4LOs_H =	-	(cfs)
	ground water seepage from Overburden pond - PW1	Q_gOp1_H =	-	(cfs)
	ground water seepage from Overburden pond - PW7	Q_gOp7_H =	-	(cfs)
	ground water leakage from Haul Road pond - PW2	Q_gHRp2_H =	-	(cfs)
	ground water leakage from Haul Road pond - PW4	Q_gHRp4_H =	-	(cfs)
	ground water leakage from RTH pond - PW3	Q_gRTHp_H =	-	(cfs)
	ground water liner leakage from WWTF pond	Q_gWTFp_H =	-	(cfs)

**Partridge River Mass-Balance--Mine Site-Proposed Action**

Case Parameter	Post-Closure Silver		
Input concentration data	High Flow Conditions	C s1 =	0.0001 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0001 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0001 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0001 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0001 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0001 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0001 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0001 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0001 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0001 (mg/L)
	concentration of West Pit overflow	C sms =	0.0009 (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0006 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0006 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0006 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0006 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0006 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0006 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0006 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0006 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	0.0002 (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	0.0009 (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	0.0007 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	0.0007 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0007 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0007 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	0.0007 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C gC3s =	0.0007 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.0007 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0007 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	- (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0006 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0006 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0006 (mg/L)
	concentration of liner leakage from WWTF pond	C gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M s1 =	0.23820 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.00280 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.00340 (mg/s)
	mass flux of surface water into SW-002	M s2 =	0.25106 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.00416 (mg/s)
	mass flux of surface water into SW-003	M s3 =	0.16257 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.00166 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	0.00007 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	0.17562 (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.00486 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	0.00007 (mg/s)
	mass flux of seepage from West Pit	M gwp =	0.00103 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M s4A =	1.97427 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.02157 (mg/s)
	mass flux of West Pit overflow	M sms =	0.36469 (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M gC12 =	0.00045 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	0.37979 (mg/s)
	mass flux of ground water into SW-005	M g5 =	0.03533 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	0.00372 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.00732 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	0.95080 (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	0.01821 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.00110 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M r1 =	0.2444 (mg/s)
	mass flux in river at SW-002	M r2 =	0.4996 (mg/s)
	mass flux in river at SW-003	M r3 =	0.6636 (mg/s)
	mass flux in river at SW-004	M r4 =	0.8455 (mg/s)
	mass flux in river at SW-004A	M r4A =	3.2065 (mg/s)
	mass flux in river at SW-005	M r5 =	3.6216 (mg/s)
	mass flux in river at USGS Gage	M r6 =	3.6289 (mg/s)
	mass flux into Colby Lake	M cl =	4.5990 (mg/s)
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C r1 =	0.00010 (mg/L)
	concentration in river at SW-002	C r2 =	0.00010 (mg/L)
	concentration in river at SW-003	C r3 =	0.00010 (mg/L)
	concentration in river at SW-004	C r4 =	0.00010 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00011 (mg/L)
	concentration in river at SW-005	C r5 =	0.00011 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00011 (mg/L)
	concentration in Colby Lake	C cl =	0.00012 (mg/L)

Partridge River Mass-Balance--Mine Site-Proposed Action

Case Parameter	Post-Closure Aluminum		
Input concentration data	High Flow Conditions	C s1 =	0.0700 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0700 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0700 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0700 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0700 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0700 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0700 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0700 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shi =	0.0700 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0173 (mg/L)
	concentration of West Pit overflow	C sms =	0.0186 (mg/L)
	concentration of ground water into SW-001	C g1 =	0.1250 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.1250 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.1250 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.1250 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.1250 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.1250 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.1250 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.1250 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	0.6488 (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	0.0186 (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	1.6800 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	83.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	83.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	83.0000 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	0.1400 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	1.6800 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C gC3s =	83.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	83.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	83.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.4106 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.1250 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.1250 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.1250 (mg/L)
	concentration of liner leakage from WWTF pond	C gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M s1 =	166.74077 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.63675 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.48959 (mg/s)
	mass flux of surface water into SW-002	M s2 =	175.74303 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.94651 (mg/s)
	mass flux of surface water into SW-003	M s3 =	113.79939 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.37689 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	0.20473 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M gC3_003 =	0.37037 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.41501 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M gC3s_003 =	0.00004 (mg/s)
	mass flux of surface water into SW-004	M s4 =	122.93188 (mg/s)
	mass flux of ground water into SW-004	M g4 =	1.10403 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	0.20473 (mg/s)
	mass flux of seepage from West Pit	M gwp =	0.02109 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M gC3_004 =	0.41501 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.41501 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.05434 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00008 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00004 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M s4A =	1,381.99182 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	4.90183 (mg/s)
	mass flux of West Pit overflow	M sms =	7.46254 (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M gC12 =	1.07123 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M gC12s =	0.00004 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M gO12 =	0.66310 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	265.84963 (mg/s)
	mass flux of ground water into SW-005	M g5 =	8.03013 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	(2.60468) (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	1.66263 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	665.55657 (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	4.13888 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shi =	0.77259 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M r1 =	167.8671 (mg/s)
	mass flux in river at SW-002	M r2 =	344.5567 (mg/s)
	mass flux in river at SW-003	M r3 =	459.7231 (mg/s)
	mass flux in river at SW-004	M r4 =	584.4543 (mg/s)
	mass flux in river at SW-004A	M r4A =	1,980.5449 (mg/s)
	mass flux in river at SW-005	M r5 =	2,254.4247 (mg/s)
	mass flux in river at USGS Gage	M r6 =	2,256.0873 (mg/s)
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C r1 =	0.06950 (mg/L)
	concentration in river at SW-002	C r2 =	0.06984 (mg/L)
	concentration in river at SW-003	C r3 =	0.07005 (mg/L)
	concentration in river at SW-004	C r4 =	0.07017 (mg/L)
	concentration in river at SW-004A	C r4A =	0.06945 (mg/L)
	concentration in river at SW-005	C r5 =	0.06962 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.06973 (mg/L)
	concentration in Colby Lake	C cl =	0.07099 (mg/L)

Partridge River Mass-Balance--Mine Site-Proposed Action

Case Parameter	Post-Closure Arsenic		
Input concentration data	High Flow Conditions	C s1 =	0.0021 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0021 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0021 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0021 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0021 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0021 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0021 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0021 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shi =	0.0021 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0065 (mg/L)
	concentration of West Pit overflow	C sms =	0.1985 (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0022 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0022 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0022 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0022 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0022 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0022 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0022 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0022 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	0.0216 (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	0.1985 (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	0.7100 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	0.7100 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.7100 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.7100 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	0.0027 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	0.7100 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C gC3s =	0.7100 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.7100 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.7100 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0016 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0022 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0022 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0022 (mg/L)
	concentration of liner leakage from WWTF pond	C gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	5.02604 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.01100 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.18395 (mg/s)
	mass flux of surface water into SW-002	M s2 =	5.29740 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.01636 (mg/s)
	mass flux of surface water into SW-003	M s3 =	3.43024 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.00651 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	0.00683 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M gC3_003 =	0.00317 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00355 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	3.70552 (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.01908 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	0.00683 (mg/s)
	mass flux of seepage from West Pit	M gwp =	0.22544 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M gC3_004 =	0.00355 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00355 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00046 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M s4A =	41.65718 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.08470 (mg/s)
	mass flux of West Pit overflow	M sms =	79.75244 (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M gC12 =	0.45272 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M gC12s =	0.00002 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M gO12 =	0.01279 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	8.01347 (mg/s)
	mass flux of ground water into SW-005	M g5 =	0.13876 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	(0.07851) (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.02873 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	20.06176 (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	0.07152 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shi =	0.02329 (mg/s)
Mass balance at each node	mass flux in river at SW-001	M r1 =	5.2210 (mg/s)
	mass flux in river at SW-002	M r2 =	10.5347 (mg/s)
	mass flux in river at SW-003	M r3 =	13.9861 (mg/s)
	mass flux in river at SW-004	M r4 =	17.9459 (mg/s)
	mass flux in river at SW-004A	M r4A =	139.9058 (mg/s)
	mass flux in river at SW-005	M r5 =	148.0580 (mg/s)
	mass flux in river at USGS Gage	M r6 =	148.0867 (mg/s)
	mass flux into Colby Lake	M cl =	168.2433 (mg/s)
Convert mass flux to concentration	concentration in river at SW-001	C r1 =	0.00216 (mg/L)
	concentration in river at SW-002	C r2 =	0.00214 (mg/L)
	concentration in river at SW-003	C r3 =	0.00213 (mg/L)
	concentration in river at SW-004	C r4 =	0.00215 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00491 (mg/L)
	concentration in river at SW-005	C r5 =	0.00457 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00458 (mg/L)
	concentration in Colby Lake	C cl =	0.00515 (mg/L)



Partridge River Mass-Balance--Mine Site-Proposed Action

Case Parameter	Post-Closure Boron		
Input concentration data	High Flow Conditions	C_s1 =	0.0450 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0450 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0450 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0450 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0450 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0450 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0450 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0450 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0450 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0960 (mg/L)
	concentration of West Pit overflow	C_sms =	0.3308 (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0870 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0870 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0870 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0870 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0870 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0870 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0870 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0870 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.1200 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	0.3308 (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.7600 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	0.7600 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.7600 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.7600 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0370 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.7600 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	0.7600 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.7600 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.7600 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0622 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0870 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0870 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0870 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M_s1 =	107.19050 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.44318 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	2.71680 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	112.97766 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.65877 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	73.15675 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.26232 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.03787 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.00339 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00380 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	79.02764 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.76841 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.03787 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	0.37577 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	0.00380 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00380 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00050 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	888.42331 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	3.41167 (mg/s)
	mass flux of West Pit overflow	M_sms =	132.93477 (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.48460 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00002 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.17525 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	170.90334 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	5.58897 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	1.67443 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	1.15719 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	427.85780 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	2.88066 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.49667 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	110.3505 (mg/s)
	mass flux in river at SW-002	M_r2 =	223.9869 (mg/s)
	mass flux in river at SW-003	M_r3 =	297.4510 (mg/s)
	mass flux in river at SW-004	M_r4 =	377.6650 (mg/s)
	mass flux in river at SW-004A	M_r4A =	1,403.0946 (mg/s)
	mass flux in river at SW-005	M_r5 =	1,579.5869 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	1,580.7441 (mg/s)
	mass flux into Colby Lake	M_cl =	2,011.9793 (mg/s)
	High Flow		
Convert mass flux to concentration	concentration in river at SW-001	C_r1 =	0.04569 (mg/L)
	concentration in river at SW-002	C_r2 =	0.04540 (mg/L)
	concentration in river at SW-003	C_r3 =	0.04532 (mg/L)
	concentration in river at SW-004	C_r4 =	0.04534 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.04920 (mg/L)
	concentration in river at SW-005	C_r5 =	0.04878 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.04885 (mg/L)
	concentration in Colby Lake	C_cl =	0.05077 (mg/L)

Partridge River Mass-Balance--Mine Site-Proposed Action

Case Parameter	Post-Closure Barium		
Input concentration data	High Flow Conditions	C s1 =	0.0077 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0077 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0077 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0077 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0077 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0077 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0077 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0077 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0077 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0050 (mg/L)
	concentration of West Pit overflow	C sms =	0.1082 (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0219 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0219 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0219 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0219 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0219 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0219 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0219 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0219 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	0.0298 (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	0.1082 (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	0.1900 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	0.1900 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.1900 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.1900 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	0.0140 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	0.1900 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C gC3s =	0.1900 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.1900 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.1900 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0168 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0219 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0219 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0219 (mg/L)
	concentration of liner leakage from WWTF pond	C gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	18.29384 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.11166 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.14150 (mg/s)
	mass flux of surface water into SW-002	M s2 =	19.28152 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.16598 (mg/s)
	mass flux of surface water into SW-003	M s3 =	12.48542 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.06609 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	0.00939 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M gC3_003 =	0.00085 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00095 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	13.48738 (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.19360 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	0.00939 (mg/s)
	mass flux of seepage from West Pit	M gwp =	0.12295 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M gC3_004 =	0.00095 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00095 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00012 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M s4A =	151.62425 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.85959 (mg/s)
	mass flux of West Pit overflow	M sms =	43.49330 (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M gC12 =	0.12115 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M gO12 =	0.06631 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	29.16750 (mg/s)
	mass flux of ground water into SW-005	M g5 =	1.40816 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	(0.28577) (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.29156 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	73.02106 (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	0.72579 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.08476 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M r1 =	18.5470 (mg/s)
	mass flux in river at SW-002	M r2 =	37.9945 (mg/s)
	mass flux in river at SW-003	M r3 =	50.5572 (mg/s)
	mass flux in river at SW-004	M r4 =	64.3716 (mg/s)
	mass flux in river at SW-004A	M r4A =	260.5362 (mg/s)
	mass flux in river at SW-005	M r5 =	291.1119 (mg/s)
	mass flux in river at USGS Gage	M r6 =	291.4034 (mg/s)
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C r1 =	0.00768 (mg/L)
	concentration in river at SW-002	C r2 =	0.00770 (mg/L)
	concentration in river at SW-003	C r3 =	0.00770 (mg/L)
	concentration in river at SW-004	C r4 =	0.00773 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00914 (mg/L)
	concentration in river at SW-005	C r5 =	0.00899 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00901 (mg/L)
	concentration in Colby Lake	C cl =	0.00959 (mg/L)

Partridge River Mass-Balance--Mine Site-Proposed Action

Case Parameter	Post-Closure Beryllium			
Input concentration data	High Flow Conditions	C s1 =	0.0001	(mg/L)
	concentration of surface water into SW-002	C s2 =	0.0001	(mg/L)
	concentration of surface water into SW-003	C s3 =	0.0001	(mg/L)
	concentration of surface water into SW-004	C s4 =	0.0001	(mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0001	(mg/L)
	concentration of surface water into SW-005	C s5 =	0.0001	(mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0001	(mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0001	(mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shi =	0.0001	(mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0001	(mg/L)
	concentration of West Pit overflow	C sms =	0.0006	(mg/L)
	concentration of ground water into SW-001	C g1 =	0.0001	(mg/L)
	concentration of ground water into SW-002	C g2 =	0.0001	(mg/L)
	concentration of ground water into SW-003	C g3 =	0.0001	(mg/L)
	concentration of ground water into SW-004	C g4 =	0.0001	(mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0001	(mg/L)
	concentration of ground water into SW-005	C g5 =	0.0001	(mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0001	(mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0001	(mg/L)
	concentration of ground water seepage from East Pit	C gep =	0.0001	(mg/L)
	concentration of ground water seepage from West Pit	C gwp =	0.0006	(mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	0.0002	(mg/L)
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	0.0023	(mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0023	(mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0023	(mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	#N/A	(mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	#N/A	(mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	-	(mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	0.0002	(mg/L)
	concentration of liner leakage from Cat 3 sumps	C gC3s =	0.0023	(mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.0023	(mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0023	(mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	#N/A	(mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	-	(mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A	(mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0001	(mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0001	(mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0001	(mg/L)
	concentration of liner leakage from WWTF pond	C gWTFp =	#N/A	(mg/L)
Convert concentration to mass flux	High Flow			
	mass flux of surface water into SW-001	M s1 =	0.23820	(mg/s)
	mass flux of ground water into SW-001	M g1 =	0.00074	(mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.00283	(mg/s)
	mass flux of surface water into SW-002	M s2 =	0.25106	(mg/s)
	mass flux of ground water into SW-002	M g2 =	0.00110	(mg/s)
	mass flux of surface water into SW-003	M s3 =	0.16257	(mg/s)
	mass flux of ground water into SW-003	M g3 =	0.00044	(mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	0.00004	(mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M gC3_003 =	0.00001	(mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00001	(mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M gC3s_003 =	0.00000	(mg/s)
	mass flux of surface water into SW-004	M s4 =	0.17562	(mg/s)
	mass flux of ground water into SW-004	M g4 =	0.00128	(mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	0.00004	(mg/s)
	mass flux of seepage from West Pit	M gwp =	0.00073	(mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M gC3_004 =	-	(mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00001	(mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00000	(mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	#N/A	(mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	#N/A	(mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000	(mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000	(mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	#N/A	(mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	-	(mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	-	(mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	-	(mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	-	(mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	#N/A	(mg/s)
	mass flux of surface water into SW-004A	M s4A =	1.97427	(mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.00569	(mg/s)
	mass flux of West Pit overflow	M sms =	0.25813	(mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M gC12 =	0.00013	(mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M gC12s =	0.00000	(mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M gO12 =	-	(mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A	(mg/s)
	mass flux of surface water into SW-005	M s5 =	0.37979	(mg/s)
	mass flux of ground water into SW-005	M g5 =	0.00931	(mg/s)
	mass flux of surface water into USGS Gage	M s6 =	(0.00372)	(mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.00193	(mg/s)
	mass flux of surface water into Colby Lake	M scl =	0.95080	(mg/s)
	mass flux of ground water into Colby Lake	M gcl =	0.00480	(mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shi =	0.00110	(mg/s)
Mass balance at each node	High Flow			
	mass flux in river at SW-001	M r1 =	0.2418	(mg/s)
	mass flux in river at SW-002	M r2 =	0.4939	(mg/s)
	mass flux in river at SW-003	M r3 =	0.6570	(mg/s)
	mass flux in river at SW-004	M r4 =	0.8347	(mg/s)
	mass flux in river at SW-004A	M r4A =	3.0729	(mg/s)
	mass flux in river at SW-005	M r5 =	3.4620	(mg/s)
	mass flux in river at USGS Gage	M r6 =	3.4639	(mg/s)
	mass flux into Colby Lake	M cl =	4.4206	(mg/s)
Convert mass flux to concentration	High Flow			
	concentration in river at SW-001	C r1 =	0.00010	(mg/L)
	concentration in river at SW-002	C r2 =	0.00010	(mg/L)
	concentration in river at SW-003	C r3 =	0.00010	(mg/L)
	concentration in river at SW-004	C r4 =	0.00010	(mg/L)
	concentration in river at SW-004A	C r4A =	0.00011	(mg/L)
	concentration in river at SW-005	C r5 =	0.00011	(mg/L)
	concentration in river at USGS Gage	C r6 =	0.00011	(mg/L)
	concentration in Colby Lake	C cl =	0.00011	(mg/L)

0.00011

Partridge River Mass-Balance--Mine Site-Proposed Action

Case Parameter	Post-Closure Calcium		
Input concentration data	High Flow Conditions	C s1 =	17.0000 (mg/L)
	concentration of surface water into SW-002	C s2 =	17.0000 (mg/L)
	concentration of surface water into SW-003	C s3 =	17.0000 (mg/L)
	concentration of surface water into SW-004	C s4 =	17.0000 (mg/L)
	concentration of surface water into SW-004A	C s4A =	17.0000 (mg/L)
	concentration of surface water into SW-005	C s5 =	17.0000 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	17.0000 (mg/L)
	concentration of surface water into Colby Lake	C scl =	17.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shi =	17.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	24.5000 (mg/L)
	concentration of West Pit overflow	C sms =	109.8669 (mg/L)
	concentration of ground water into SW-001	C g1 =	14.7900 (mg/L)
	concentration of ground water into SW-002	C g2 =	14.7900 (mg/L)
	concentration of ground water into SW-003	C g3 =	14.7900 (mg/L)
	concentration of ground water into SW-004	C g4 =	14.7900 (mg/L)
	concentration of ground water into SW-004A	C g4A =	14.7900 (mg/L)
	concentration of ground water into SW-005	C g5 =	14.7900 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	14.7900 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	14.7900 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	50.2494 (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	109.8669 (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	302.5160 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	480.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	480.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	480.0000 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	15.8000 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	302.5160 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C gC3s =	480.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	480.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	480.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	9.3700 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	14.7900 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	14.7900 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	14.7900 (mg/L)
	concentration of liner leakage from WWTF pond	C gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	40,494.18700 (mg/s)
	mass flux of ground water into SW-001	M g1 =	75.34026 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	693.35000 (mg/s)
	mass flux of surface water into SW-002	M s2 =	42,680.45049 (mg/s)
	mass flux of ground water into SW-002	M g2 =	111.99140 (mg/s)
	mass flux of surface water into SW-003	M s3 =	27,636.99421 (mg/s)
	mass flux of ground water into SW-003	M g3 =	44.59378 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	15.85596 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M gC3_003 =	2.14193 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	2.40006 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M gC3s_003 =	0.00025 (mg/s)
	mass flux of surface water into SW-004	M s4 =	29,854.88526 (mg/s)
	mass flux of ground water into SW-004	M g4 =	130.62927 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	15.85596 (mg/s)
	mass flux of seepage from West Pit	M gwp =	124.80463 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	2.40006 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.31423 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00047 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00022 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M s4A =	335,626.58551 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	579.98463 (mg/s)
	mass flux of West Pit overflow	M sms =	44,151.11360 (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M gC12 =	192.89457 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M gC12s =	0.00663 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M gO12 =	74.83577 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	64,563.48220 (mg/s)
	mass flux of ground water into SW-005	M g5 =	950.12439 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	(632.56409) (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	196.72179 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	161,635.16700 (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	489.71169 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shi =	187.62900 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M r1 =	41,262.8773 (mg/s)
	mass flux in river at SW-002	M r2 =	84,055.3192 (mg/s)
	mass flux in river at SW-003	M r3 =	111,757.3053 (mg/s)
	mass flux in river at SW-004	M r4 =	141,886.1957 (mg/s)
	mass flux in river at SW-004A	M r4A =	522,511.6164 (mg/s)
	mass flux in river at SW-005	M r5 =	588,025.2230 (mg/s)
	mass flux in river at USGS Gage	M r6 =	588,221.9448 (mg/s)
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C r1 =	17.08321 (mg/L)
	concentration in river at SW-002	C r2 =	17.03735 (mg/L)
	concentration in river at SW-003	C r3 =	17.02933 (mg/L)
	concentration in river at SW-004	C r4 =	17.03500 (mg/L)
	concentration in river at SW-004A	C r4A =	18.32199 (mg/L)
	concentration in river at SW-005	C r5 =	18.15992 (mg/L)
	concentration in river at USGS Gage	C r6 =	18.17942 (mg/L)
	concentration in Colby Lake	C cl =	18.40319 (mg/L)

Partridge River Mass-Balance--Mine Site-Proposed Action

Case Parameter	Post-Closure Cadmium		
Input concentration data	High Flow Conditions	C s1 =	0.0001 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0001 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0001 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0001 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0001 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0001 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0001 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0001 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shi =	0.0001 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0001 (mg/L)
	concentration of West Pit overflow	C sms =	0.0001 (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0001 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0001 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0001 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0001 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0001 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0001 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0001 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0001 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	0.0001 (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	0.0001 (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	0.0149 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0149 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0149 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C gC3s =	0.0149 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.0149 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0149 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0001 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0001 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0001 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0001 (mg/L)
	concentration of liner leakage from VVWTF pond	C gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	0.23820 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.00051 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.00283 (mg/s)
	mass flux of surface water into SW-002	M s2 =	0.25106 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.00076 (mg/s)
	mass flux of surface water into SW-003	M s3 =	0.16257 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.00030 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	0.00002 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M gC3_003 =	0.00007 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00007 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	0.17562 (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.00088 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	0.00002 (mg/s)
	mass flux of seepage from West Pit	M gwp =	0.00016 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00007 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00001 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	- (mg/s)
	mass flux of liner leakage from VVWTF pond	M gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M s4A =	1.97427 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.00392 (mg/s)
	mass flux of West Pit overflow	M sms =	0.05529 (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M gC12 =	0.00011 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	0.37979 (mg/s)
	mass flux of ground water into SW-005	M g5 =	0.00642 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	(0.00372) (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.00133 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	0.95080 (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	0.00331 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shi =	0.00110 (mg/s)
Mass balance at each node			High Flow
	mass flux in river at SW-001	M r1 =	0.2415 (mg/s)
	mass flux in river at SW-002	M r2 =	0.4934 (mg/s)
	mass flux in river at SW-003	M r3 =	0.6564 (mg/s)
	mass flux in river at SW-004	M r4 =	0.8331 (mg/s)
	mass flux in river at SW-004A	M r4A =	2.8668 (mg/s)
	mass flux in river at SW-005	M r5 =	3.2530 (mg/s)
	mass flux in river at USGS Gage	M r6 =	3.2543 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M cl =	4.2095 (mg/s)
			High Flow
	concentration in river at SW-001	C r1 =	0.00010 (mg/L)
	concentration in river at SW-002	C r2 =	0.00010 (mg/L)
	concentration in river at SW-003	C r3 =	0.00010 (mg/L)
	concentration in river at SW-004	C r4 =	0.00010 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00010 (mg/L)
	concentration in river at SW-005	C r5 =	0.00010 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00010 (mg/L)
	concentration in Colby Lake	C cl =	0.00010 (mg/L)

0.00010

Partridge River Mass-Balance--Mine Site-Proposed Action

Case Parameter	Post-Closure Chloride		
Input concentration data	High Flow Conditions	C s1 =	8.0000 (mg/L)
	concentration of surface water into SW-002	C s2 =	8.0000 (mg/L)
	concentration of surface water into SW-003	C s3 =	8.0000 (mg/L)
	concentration of surface water into SW-004	C s4 =	8.0000 (mg/L)
	concentration of surface water into SW-004A	C s4A =	8.0000 (mg/L)
	concentration of surface water into SW-005	C s5 =	8.0000 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	8.0000 (mg/L)
	concentration of surface water into Colby Lake	C scl =	8.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shi =	8.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	1.6000 (mg/L)
	concentration of West Pit overflow	C sms =	11.5392 (mg/L)
	concentration of ground water into SW-001	C g1 =	6.6000 (mg/L)
	concentration of ground water into SW-002	C g2 =	6.6000 (mg/L)
	concentration of ground water into SW-003	C g3 =	6.6000 (mg/L)
	concentration of ground water into SW-004	C g4 =	6.6000 (mg/L)
	concentration of ground water into SW-004A	C g4A =	6.6000 (mg/L)
	concentration of ground water into SW-005	C g5 =	6.6000 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	6.6000 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	6.6000 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	21.4005 (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	11.5392 (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	- (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	- (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	- (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	- (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	2.3300 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	- (mg/L)
	concentration of liner leakage from Cat 3 sumps	C gC3s =	- (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	- (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	- (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	5.3500 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	6.6000 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	6.6000 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	6.6000 (mg/L)
	concentration of liner leakage from WWTF pond	C gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	19,056.08800 (mg/s)
	mass flux of ground water into SW-001	M g1 =	33.62040 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	45.28000 (mg/s)
	mass flux of surface water into SW-002	M s2 =	20,084.91788 (mg/s)
	mass flux of ground water into SW-002	M g2 =	49.97588 (mg/s)
	mass flux of surface water into SW-003	M s3 =	13,005.64433 (mg/s)
	mass flux of ground water into SW-003	M g3 =	19.89986 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	6.75281 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M gC3_003 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	- (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M gC3s_003 =	- (mg/s)
	mass flux of surface water into SW-004	M s4 =	14,049.35777 (mg/s)
	mass flux of ground water into SW-004	M g4 =	58.29298 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	6.75281 (mg/s)
	mass flux of seepage from West Pit	M gwp =	13.10812 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	- (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	- (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	- (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	- (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M s4A =	157,941.92259 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	258.81667 (mg/s)
	mass flux of West Pit overflow	M sms =	4,637.15263 (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M gC12s =	- (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M gO12 =	11.03591 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	30,382.81515 (mg/s)
	mass flux of ground water into SW-005	M g5 =	423.99060 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	(297.67722) (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	87.78660 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	76,063.60800 (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	218.53260 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shi =	88.29600 (mg/s)
Mass balance at each node			High Flow
	mass flux in river at SW-001	M r1 =	19,134.9884 (mg/s)
	mass flux in river at SW-002	M r2 =	39,269.8822 (mg/s)
	mass flux in river at SW-003	M r3 =	52,302.1792 (mg/s)
	mass flux in river at SW-004	M r4 =	66,429.6908 (mg/s)
	mass flux in river at SW-004A	M r4A =	229,278.6186 (mg/s)
	mass flux in river at SW-005	M r5 =	260,085.4244 (mg/s)
	mass flux in river at USGS Gage	M r6 =	260,173.2110 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M cl =	336,543.6476 (mg/s)
			High Flow
	concentration in river at SW-001	C r1 =	7.92206 (mg/L)
	concentration in river at SW-002	C r2 =	7.95969 (mg/L)
	concentration in river at SW-003	C r3 =	7.96969 (mg/L)
	concentration in river at SW-004	C r4 =	7.97562 (mg/L)
	concentration in river at SW-004A	C r4A =	8.03971 (mg/L)
	concentration in river at SW-005	C r5 =	8.03219 (mg/L)
	concentration in river at USGS Gage	C r6 =	8.04084 (mg/L)
	concentration in Colby Lake	C cl =	7.98796 (mg/L)



Partridge River Mass-Balance--Mine Site-Proposed Action

Case Parameter	Post-Closure Cobalt		
Input concentration data	High Flow Conditions	C s1 =	0.0005 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0005 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0005 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0005 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0005 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0005 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0005 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0005 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shi =	0.0005 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0005 (mg/L)
	concentration of West Pit overflow	C sms =	0.0075 (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0017 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0017 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0017 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0017 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0017 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0017 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0017 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0017 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	0.0017 (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	0.0075 (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	0.0189 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	44.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	44.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	44.0000 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	0.0013 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	0.0189 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C gC3s =	44.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	44.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	44.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0011 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0017 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0017 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0017 (mg/L)
	concentration of liner leakage from WWTF pond	C gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	1.19101 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.00841 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.01415 (mg/s)
	mass flux of surface water into SW-002	M s2 =	1.25531 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.01249 (mg/s)
	mass flux of surface water into SW-003	M s3 =	0.81285 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.00497 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	0.00054 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M gC3_003 =	0.19634 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.22001 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M gC3s_003 =	0.00002 (mg/s)
	mass flux of surface water into SW-004	M s4 =	0.87808 (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.01457 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	0.00054 (mg/s)
	mass flux of seepage from West Pit	M gwp =	0.00852 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M gC3_004 =	0.22001 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.22001 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.02880 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00004 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00002 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M s4A =	9.87137 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.06470 (mg/s)
	mass flux of West Pit overflow	M sms =	3.01244 (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M gC12 =	0.01204 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M gO12 =	0.00616 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	1.89893 (mg/s)
	mass flux of ground water into SW-005	M g5 =	0.10600 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	(0.01860) (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.02195 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	4.75396 (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	0.05463 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shi =	0.00552 (mg/s)
Mass balance at each node	mass flux in river at SW-001	M r1 =	1.2136 (mg/s)
	mass flux in river at SW-002	M r2 =	2.4814 (mg/s)
	mass flux in river at SW-003	M r3 =	3.7161 (mg/s)
	mass flux in river at SW-004	M r4 =	4.8667 (mg/s)
	mass flux in river at SW-004A	M r4A =	17.8334 (mg/s)
	mass flux in river at SW-005	M r5 =	19.8383 (mg/s)
	mass flux in river at USGS Gage	M r6 =	19.8603 (mg/s)
	mass flux into Colby Lake	M cl =	24.6744 (mg/s)
Convert mass flux to concentration	concentration in river at SW-001	C r1 =	0.00050 (mg/L)
	concentration in river at SW-002	C r2 =	0.00050 (mg/L)
	concentration in river at SW-003	C r3 =	0.00057 (mg/L)
	concentration in river at SW-004	C r4 =	0.00058 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00063 (mg/L)
	concentration in river at SW-005	C r5 =	0.00061 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00061 (mg/L)
	concentration in Colby Lake	C cl =	0.00074 (mg/L)

0.00092

Partridge River Mass-Balance--Mine Site-Proposed Action

Case Parameter	Post-Closure Copper			
Input concentration data	High Flow Conditions	C_s1 =	0.0017	(mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0017	(mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0017	(mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0017	(mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0017	(mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0017	(mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0017	(mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0017	(mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0190	(mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0012	(mg/L)
	concentration of West Pit overflow	C_sms =	0.0060	(mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0030	(mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0030	(mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0030	(mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0030	(mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0030	(mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0030	(mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0030	(mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0030	(mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.0622	(mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	0.0060	(mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C_gC12 =	0.0920	(mg/L)
	concentration of liner leakage from Cat 3 stockpile	C_gC3 =	202.0000	(mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	202.0000	(mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	30.3269	(mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A	(mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A	(mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C_gO12 =	0.0170	(mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C_gC12s =	0.0920	(mg/L)
	concentration of liner leakage from Cat 3 sumps	C_gC3s =	202.0000	(mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_g3LOs =	202.0000	(mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	30.3269	(mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A	(mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0214	(mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A	(mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0030	(mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0030	(mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0030	(mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A	(mg/L)
Convert concentration to mass flux	High Flow			
	mass flux of surface water into SW-001	M_s1 =	4.04942	(mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.01503	(mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.03509	(mg/s)
	mass flux of surface water into SW-002	M_s2 =	4.26805	(mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.02234	(mg/s)
	mass flux of surface water into SW-003	M_s3 =	2.76370	(mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00889	(mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.01962	(mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M_gC3_003 =	0.90139	(mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	1.01003	(mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M_gC3s_003 =	0.00011	(mg/s)
	mass flux of surface water into SW-004	M_s4 =	2.98549	(mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.02606	(mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.01962	(mg/s)
	mass flux of seepage from West Pit	M_gwp =	0.00682	(mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M_gC3_004 =	-	(mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	1.01003	(mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.01985	(mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A	(mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A	(mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00020	(mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00001	(mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A	(mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	-	(mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	-	(mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	-	(mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	-	(mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A	(mg/s)
	mass flux of surface water into SW-004A	M_s4A =	33.56266	(mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.11568	(mg/s)
	mass flux of West Pit overflow	M_sms =	2.41116	(mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M_gC12 =	0.05866	(mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M_gC12s =	0.00000	(mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M_gO12 =	0.08052	(mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A	(mg/s)
	mass flux of surface water into SW-005	M_s5 =	6.45635	(mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.18951	(mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	(0.06326)	(mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.03924	(mg/s)
	mass flux of surface water into Colby Lake	M_scl =	16.16352	(mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.09768	(mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.20970	(mg/s)
Mass balance at each node	High Flow			
	mass flux in river at SW-001	M_r1 =	4.0995	(mg/s)
	mass flux in river at SW-002	M_r2 =	8.3899	(mg/s)
	mass flux in river at SW-003	M_r3 =	13.0937	(mg/s)
	mass flux in river at SW-004	M_r4 =	17.1618	(mg/s)
	mass flux in river at SW-004A	M_r4A =	53.3905	(mg/s)
	mass flux in river at SW-005	M_r5 =	60.0364	(mg/s)
Convert mass flux to concentration	High Flow			
	concentration in river at SW-001	C_r1 =	0.00170	(mg/L)
	concentration in river at SW-002	C_r2 =	0.00170	(mg/L)
	concentration in river at SW-003	C_r3 =	0.00200	(mg/L)
	concentration in river at SW-004	C_r4 =	0.00206	(mg/L)
	concentration in river at SW-004A	C_r4A =	0.00187	(mg/L)
	concentration in river at SW-005	C_r5 =	0.00185	(mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00186	(mg/L)
	concentration in Colby Lake	C_cl =	0.00231	(mg/L)

Partridge River Mass-Balance--Mine Site-Proposed Action

Case Parameter	Post-Closure Fluoride		
Input concentration data	High Flow Conditions	C s1 =	0.0700 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0700 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0700 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0700 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0700 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0700 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0700 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0700 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shi =	0.0700 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.1400 (mg/L)
	concentration of West Pit overflow	C sms =	1.0613 (mg/L)
	concentration of ground water into SW-001	C g1 =	0.2800 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.2800 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.2800 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.2800 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.2800 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.2800 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.2800 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.2800 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	2.3674 (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	1.0613 (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	0.0625 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	0.0622 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0622 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0622 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	0.4200 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	0.0625 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C gC3s =	0.0622 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.0622 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0622 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.2239 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.2800 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.2800 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.2800 (mg/L)
	concentration of liner leakage from WWTF pond	C gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M s1 =	166.74077 (mg/s)
	mass flux of ground water into SW-001	M g1 =	1.42632 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	3.96200 (mg/s)
	mass flux of surface water into SW-002	M s2 =	175.74303 (mg/s)
	mass flux of ground water into SW-002	M g2 =	2.12019 (mg/s)
	mass flux of surface water into SW-003	M s3 =	113.79939 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.84424 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	0.74702 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M gC3_003 =	0.00028 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00031 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	122.93188 (mg/s)
	mass flux of ground water into SW-004	M g4 =	2.47304 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	0.74702 (mg/s)
	mass flux of seepage from West Pit	M gwp =	1.20562 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M gC3_004 =	0.00031 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00031 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00004 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M s4A =	1,381.99182 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	10.98010 (mg/s)
	mass flux of West Pit overflow	M sms =	426.50304 (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M gC12 =	0.03986 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M gO12 =	1.98931 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	265.84963 (mg/s)
	mass flux of ground water into SW-005	M g5 =	17.98748 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	(2.60468) (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	3.72428 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	665.55657 (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	9.27108 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shi =	0.77259 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M r1 =	172.1291 (mg/s)
	mass flux in river at SW-002	M r2 =	349.9923 (mg/s)
	mass flux in river at SW-003	M r3 =	465.3835 (mg/s)
	mass flux in river at SW-004	M r4 =	592.7415 (mg/s)
	mass flux in river at SW-004A	M r4A =	2,414.2456 (mg/s)
	mass flux in river at SW-005	M r5 =	2,698.0827 (mg/s)
	mass flux in river at USGS Gage	M r6 =	2,701.8070 (mg/s)
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C r1 =	0.07126 (mg/L)
	concentration in river at SW-002	C r2 =	0.07094 (mg/L)
	concentration in river at SW-003	C r3 =	0.07091 (mg/L)
	concentration in river at SW-004	C r4 =	0.07117 (mg/L)
	concentration in river at SW-004A	C r4A =	0.08466 (mg/L)
	concentration in river at SW-005	C r5 =	0.08332 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.08350 (mg/L)
	concentration in Colby Lake	C cl =	0.09133 (mg/L)

Partridge River Mass-Balance--Mine Site-Proposed Action

Case Parameter	Post-Closure Iron		
Input concentration data	High Flow Conditions	C s1 =	1.6000 (mg/L)
	concentration of surface water into SW-002	C s2 =	1.6000 (mg/L)
	concentration of surface water into SW-003	C s3 =	1.6000 (mg/L)
	concentration of surface water into SW-004	C s4 =	1.6000 (mg/L)
	concentration of surface water into SW-004A	C s4A =	1.6000 (mg/L)
	concentration of surface water into SW-005	C s5 =	1.6000 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	1.6000 (mg/L)
	concentration of surface water into Colby Lake	C scl =	1.6000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shi =	1.6000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0300 (mg/L)
	concentration of West Pit overflow	C sms =	0.1000 (mg/L)
	concentration of ground water into SW-001	C g1 =	2.8440 (mg/L)
	concentration of ground water into SW-002	C g2 =	2.8440 (mg/L)
	concentration of ground water into SW-003	C g3 =	2.8440 (mg/L)
	concentration of ground water into SW-004	C g4 =	2.8440 (mg/L)
	concentration of ground water into SW-004A	C g4A =	2.8440 (mg/L)
	concentration of ground water into SW-005	C g5 =	2.8440 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	2.8440 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	2.8440 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	0.8100 (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	0.1000 (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	0.8100 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	235.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	235.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	235.0000 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	0.1500 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	0.8100 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C gC3s =	235.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	235.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	235.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.2255 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	2.8440 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	2.8440 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	2.8440 (mg/L)
	concentration of liner leakage from VVWTF pond	C gVWTFp =	#N/A (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	3,811.21760 (mg/s)
	mass flux of ground water into SW-001	M g1 =	14.48734 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.84900 (mg/s)
	mass flux of surface water into SW-002	M s2 =	4,016.98358 (mg/s)
	mass flux of ground water into SW-002	M g2 =	21.53506 (mg/s)
	mass flux of surface water into SW-003	M s3 =	2,601.12887 (mg/s)
	mass flux of ground water into SW-003	M g3 =	8.57503 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	0.25560 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M gC3_003 =	1.04865 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	1.17503 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M gC3s_003 =	0.00012 (mg/s)
	mass flux of surface water into SW-004	M s4 =	2,809.87155 (mg/s)
	mass flux of ground water into SW-004	M g4 =	25.11897 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	0.25560 (mg/s)
	mass flux of seepage from West Pit	M gwp =	0.11360 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	1.17503 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.15384 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00023 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00011 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	- (mg/s)
	mass flux of liner leakage from VVWTF pond	M gVWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M s4A =	31,588.38452 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	111.52646 (mg/s)
	mass flux of West Pit overflow	M sms =	40.18600 (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M gC12 =	0.51648 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M gC12s =	0.00002 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M gO12 =	0.71047 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	6,076.56303 (mg/s)
	mass flux of ground water into SW-005	M g5 =	182.70140 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	(59.53544) (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	37.82804 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	15,212.72160 (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	94.16768 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shi =	17.65920 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M r1 =	3,826.5539 (mg/s)
	mass flux in river at SW-002	M r2 =	7,865.0726 (mg/s)
	mass flux in river at SW-003	M r3 =	10,477.2559 (mg/s)
	mass flux in river at SW-004	M r4 =	13,313.9449 (mg/s)
	mass flux in river at SW-004A	M r4A =	45,055.2689 (mg/s)
	mass flux in river at SW-005	M r5 =	51,314.5333 (mg/s)
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C r1 =	1.58423 (mg/L)
	concentration in river at SW-002	C r2 =	1.59419 (mg/L)
	concentration in river at SW-003	C r3 =	1.59650 (mg/L)
	concentration in river at SW-004	C r4 =	1.59849 (mg/L)
	concentration in river at SW-004A	C r4A =	1.57987 (mg/L)
	concentration in river at SW-005	C r5 =	1.58474 (mg/L)
	concentration in river at USGS Gage	C r6 =	1.58708 (mg/L)
	concentration in Colby Lake	C cl =	1.60559 (mg/L)

Partridge River Mass-Balance--Mine Site-Proposed Action

Case Parameter	Post-Closure Hardness		
Input concentration data	High Flow Conditions	C s1 =	110.0000 (mg/L)
	concentration of surface water into SW-002	C s2 =	110.0000 (mg/L)
	concentration of surface water into SW-003	C s3 =	110.0000 (mg/L)
	concentration of surface water into SW-004	C s4 =	110.0000 (mg/L)
	concentration of surface water into SW-004A	C s4A =	110.0000 (mg/L)
	concentration of surface water into SW-005	C s5 =	110.0000 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	110.0000 (mg/L)
	concentration of surface water into Colby Lake	C scl =	110.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shi =	110.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	110.0000 (mg/L)
	concentration of West Pit overflow	C sms =	364.0759 (mg/L)
	concentration of ground water into SW-001	C g1 =	66.4200 (mg/L)
	concentration of ground water into SW-002	C g2 =	66.4200 (mg/L)
	concentration of ground water into SW-003	C g3 =	66.4200 (mg/L)
	concentration of ground water into SW-004	C g4 =	66.4200 (mg/L)
	concentration of ground water into SW-004A	C g4A =	66.4200 (mg/L)
	concentration of ground water into SW-005	C g5 =	66.4200 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	66.4200 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	66.4200 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	174.1458 (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	364.0759 (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	980.4055 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	5,435.6906 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	5,435.6906 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	5,435.6906 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	71.5000 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	980.4055 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C gC3s =	5,435.6906 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	5,435.6906 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	5,435.6906 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	43.5200 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	66.4200 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	66.4200 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	66.4200 (mg/L)
	concentration of liner leakage from WWTF pond	C gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	262,021.21000 (mg/s)
	mass flux of ground water into SW-001	M g1 =	338.34348 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	3,113.00000 (mg/s)
	mass flux of surface water into SW-002	M s2 =	276,167.62084 (mg/s)
	mass flux of ground water into SW-002	M g2 =	502.93907 (mg/s)
	mass flux of surface water into SW-003	M s3 =	178,827.60960 (mg/s)
	mass flux of ground water into SW-003	M g3 =	200.26497 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	54.95085 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M gC3_003 =	24.25593 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	27.17914 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M gC3s_003 =	0.00286 (mg/s)
	mass flux of surface water into SW-004	M s4 =	193,178.66935 (mg/s)
	mass flux of ground water into SW-004	M g4 =	586.63934 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	54.95085 (mg/s)
	mass flux of seepage from West Pit	M gwp =	413.57642 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M gC3_004 =	27.17914 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile to SW-004	M gC4 =	3.55842 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00534 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00248 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M s4A =	##### (mg/s)
	mass flux of ground water into SW-004A	M g4A =	2,604.63688 (mg/s)
	mass flux of West Pit overflow	M sms =	146,307.55377 (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M gC12 =	625.14007 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M gC12s =	0.02148 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M gO12 =	338.65554 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	417,763.70835 (mg/s)
	mass flux of ground water into SW-005	M g5 =	4,266.88722 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	(4,093.06174) (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	883.45242 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	##### (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	2,199.23262 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shi =	1,214.07000 (mg/s)
Mass balance at each node			High Flow
	mass flux in river at SW-001	M r1 =	265,472.5535 (mg/s)
	mass flux in river at SW-002	M r2 =	542,143.1134 (mg/s)
	mass flux in river at SW-003	M r3 =	721,277.3767 (mg/s)
	mass flux in river at SW-004	M r4 =	915,541.9609 (mg/s)
	mass flux in river at SW-004A	M r4A =	3,237,119.4043 (mg/s)
	mass flux in river at SW-005	M r5 =	3,659,149.9999 (mg/s)
	mass flux in river at USGS Gage	M r6 =	3,660,033.4523 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M cl =	4,709,321.3649 (mg/s)
			High Flow
	concentration in river at SW-001	C r1 =	109.90809 (mg/L)
	concentration in river at SW-002	C r2 =	109.88812 (mg/L)
	concentration in river at SW-003	C r3 =	109.90663 (mg/L)
	concentration in river at SW-004	C r4 =	109.92092 (mg/L)
	concentration in river at SW-004A	C r4A =	113.51031 (mg/L)
	concentration in river at SW-005	C r5 =	113.00516 (mg/L)
	concentration in river at USGS Gage	C r6 =	113.11597 (mg/L)
	concentration in Colby Lake	C cl =	112.74335 (mg/L)

Partridge River Mass-Balance--Mine Site-Proposed Action

Case Parameter	Post-Closure Potassium		
Input concentration data	High Flow Conditions	C s1 =	1.3000 (mg/L)
	concentration of surface water into SW-002	C s2 =	1.3000 (mg/L)
	concentration of surface water into SW-003	C s3 =	1.3000 (mg/L)
	concentration of surface water into SW-004	C s4 =	1.3000 (mg/L)
	concentration of surface water into SW-004A	C s4A =	1.3000 (mg/L)
	concentration of surface water into SW-005	C s5 =	1.3000 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	1.3000 (mg/L)
	concentration of surface water into Colby Lake	C scl =	1.3000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shi =	1.3000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	2.7000 (mg/L)
	concentration of West Pit overflow	C sms =	20.6711 (mg/L)
	concentration of ground water into SW-001	C g1 =	1.7500 (mg/L)
	concentration of ground water into SW-002	C g2 =	1.7500 (mg/L)
	concentration of ground water into SW-003	C g3 =	1.7500 (mg/L)
	concentration of ground water into SW-004	C g4 =	1.7500 (mg/L)
	concentration of ground water into SW-004A	C g4A =	1.7500 (mg/L)
	concentration of ground water into SW-005	C g5 =	1.7500 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	1.7500 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	1.7500 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	7.9075 (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	20.6711 (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	49.0000 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	38.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	38.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	38.0000 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	4.4500 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	49.0000 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C gC3s =	38.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	38.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	38.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	2.2600 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	1.7500 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	1.7500 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	1.7500 (mg/L)
	concentration of liner leakage from WWTF pond	C gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	3,096.61430 (mg/s)
	mass flux of ground water into SW-001	M g1 =	8.91450 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	76.41000 (mg/s)
	mass flux of surface water into SW-002	M s2 =	3,263.79916 (mg/s)
	mass flux of ground water into SW-002	M g2 =	13.25118 (mg/s)
	mass flux of surface water into SW-003	M s3 =	2,113.41720 (mg/s)
	mass flux of ground water into SW-003	M g3 =	5.27648 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	2.49517 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M gC3_003 =	0.16957 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.19000 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M gC3s_003 =	0.00002 (mg/s)
	mass flux of surface water into SW-004	M s4 =	2,283.02064 (mg/s)
	mass flux of ground water into SW-004	M g4 =	15.45647 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	2.49517 (mg/s)
	mass flux of seepage from West Pit	M gwp =	23.48163 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.19000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.02488 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00004 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00002 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M s4A =	25,665.56242 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	68.62563 (mg/s)
	mass flux of West Pit overflow	M sms =	8,306.90379 (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M gC12 =	31.24408 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M gC12s =	0.00107 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M gO12 =	21.07716 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	4,937.20746 (mg/s)
	mass flux of ground water into SW-005	M g5 =	112.42175 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	(48.37255) (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	23.27675 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	12,360.33630 (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	57.94425 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shi =	14.34810 (mg/s)
Mass balance at each node			High Flow
	mass flux in river at SW-001	M r1 =	3,181.9388 (mg/s)
	mass flux in river at SW-002	M r2 =	6,458.9891 (mg/s)
	mass flux in river at SW-003	M r3 =	8,580.5316 (mg/s)
	mass flux in river at SW-004	M r4 =	10,905.2065 (mg/s)
	mass flux in river at SW-004A	M r4A =	44,998.6206 (mg/s)
	mass flux in river at SW-005	M r5 =	50,048.2498 (mg/s)
	mass flux in river at USGS Gage	M r6 =	50,071.5266 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M cl =	62,504.1552 (mg/s)
			High Flow
	concentration in river at SW-001	C r1 =	1.31735 (mg/L)
	concentration in river at SW-002	C r2 =	1.30919 (mg/L)
	concentration in river at SW-003	C r3 =	1.30748 (mg/L)
	concentration in river at SW-004	C r4 =	1.30929 (mg/L)
	concentration in river at SW-004A	C r4A =	1.57789 (mg/L)
	concentration in river at SW-005	C r5 =	1.54564 (mg/L)
	concentration in river at USGS Gage	C r6 =	1.54750 (mg/L)
	concentration in Colby Lake	C cl =	1.61581 (mg/L)



Partridge River Mass-Balance--Mine Site-Proposed Action

Case Parameter	Post-Closure Magnesium		
Input concentration data	High Flow Conditions	C s1 =	8.0000 (mg/L)
	concentration of surface water into SW-002	C s2 =	8.0000 (mg/L)
	concentration of surface water into SW-003	C s3 =	8.0000 (mg/L)
	concentration of surface water into SW-004	C s4 =	8.0000 (mg/L)
	concentration of surface water into SW-004A	C s4A =	8.0000 (mg/L)
	concentration of surface water into SW-005	C s5 =	8.0000 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	8.0000 (mg/L)
	concentration of surface water into Colby Lake	C scl =	8.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shi =	8.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	10.5000 (mg/L)
	concentration of West Pit overflow	C sms =	21.8956 (mg/L)
	concentration of ground water into SW-001	C g1 =	8.0200 (mg/L)
	concentration of ground water into SW-002	C g2 =	8.0200 (mg/L)
	concentration of ground water into SW-003	C g3 =	8.0200 (mg/L)
	concentration of ground water into SW-004	C g4 =	8.0200 (mg/L)
	concentration of ground water into SW-004A	C g4A =	8.0200 (mg/L)
	concentration of ground water into SW-005	C g5 =	8.0200 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	8.0200 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	8.0200 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	11.8498 (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	21.8956 (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	54.9183 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	1.030.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	1.030.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	1.030.0000 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	9.0100 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	54.9183 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C gC3s =	1.030.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	1.030.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	1.030.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	4.8800 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	8.0200 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	8.0200 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	8.0200 (mg/L)
	concentration of liner leakage from VVWTF pond	C gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	19,056.08800 (mg/s)
	mass flux of ground water into SW-001	M g1 =	40.85388 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	297.15000 (mg/s)
	mass flux of surface water into SW-002	M s2 =	20,084.91788 (mg/s)
	mass flux of ground water into SW-002	M g2 =	60.72826 (mg/s)
	mass flux of surface water into SW-003	M s3 =	13,005.64433 (mg/s)
	mass flux of ground water into SW-003	M g3 =	24.18135 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	3.73914 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M gC3_003 =	4.59622 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	5.15013 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M gC3s_003 =	0.00054 (mg/s)
	mass flux of surface water into SW-004	M s4 =	14,049.35777 (mg/s)
	mass flux of ground water into SW-004	M g4 =	70.83480 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	3.73914 (mg/s)
	mass flux of seepage from West Pit	M gwp =	24.87261 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M gC3_004 =	5.15013 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	5.15013 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.67428 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00101 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00047 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	- (mg/s)
	mass flux of liner leakage from VVWTF pond	M gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M s4A =	157,941.92259 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	314.50147 (mg/s)
	mass flux of West Pit overflow	M sms =	8,798.98016 (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M gC12 =	35.01781 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M gC12s =	0.00120 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M gO12 =	42.67533 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	30,382.81515 (mg/s)
	mass flux of ground water into SW-005	M g5 =	515.21282 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	(297.67722) (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	106.67402 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	76,063.90800 (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	265.55022 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shi =	88.29600 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M r1 =	19,394.0919 (mg/s)
	mass flux in river at SW-002	M r2 =	39,539.7380 (mg/s)
	mass flux in river at SW-003	M r3 =	52,583.0497 (mg/s)
	mass flux in river at SW-004	M r4 =	66,737.6805 (mg/s)
	mass flux in river at SW-004A	M r4A =	233,870.7791 (mg/s)
	mass flux in river at SW-005	M r5 =	264,768.8070 (mg/s)
	mass flux in river at USGS Gage	M r6 =	264,875.4811 (mg/s)
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C r1 =	8.02933 (mg/L)
	concentration in river at SW-002	C r2 =	8.01436 (mg/L)
	concentration in river at SW-003	C r3 =	8.01249 (mg/L)
	concentration in river at SW-004	C r4 =	8.01260 (mg/L)
	concentration in river at SW-004A	C r4A =	8.20073 (mg/L)
	concentration in river at SW-005	C r5 =	8.17683 (mg/L)
	concentration in river at USGS Gage	C r6 =	8.18617 (mg/L)
	concentration in Colby Lake	C cl =	8.23136 (mg/L)

Partridge River Mass-Balance--Mine Site-Proposed Action

Case Parameter	Post-Closure Manganese		
Input concentration data	High Flow Conditions	C s1 =	0.1500 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.1500 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.1500 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.1500 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.1500 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.1500 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.1500 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.1500 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shi =	0.1500 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0086 (mg/L)
	concentration of West Pit overflow	C sms =	0.0100 (mg/L)
	concentration of ground water into SW-001	C g1 =	0.1240 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.1240 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.1240 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.1240 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.1240 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.1240 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.1240 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.1240 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	0.1850 (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	0.0100 (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	0.4120 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	47.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	47.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	47.0000 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	0.1160 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	0.4120 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C gC3s =	47.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	47.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	47.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.1604 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.1240 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.1240 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.1240 (mg/L)
	concentration of liner leakage from WWTF pond	C gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M s1 =	357.30165 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.63166 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.24338 (mg/s)
	mass flux of surface water into SW-002	M s2 =	376.59221 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.93894 (mg/s)
	mass flux of surface water into SW-003	M s3 =	243.85583 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.37388 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	0.05839 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M gC3_003 =	0.20973 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.23501 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M gC3s_003 =	0.00002 (mg/s)
	mass flux of surface water into SW-004	M s4 =	263.42546 (mg/s)
	mass flux of ground water into SW-004	M g4 =	1.09520 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	0.05839 (mg/s)
	mass flux of seepage from West Pit	M gwp =	0.01136 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.23501 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.03077 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00005 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00002 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M s4A =	2,961.41105 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	4.86262 (mg/s)
	mass flux of West Pit overflow	M sms =	4.01860 (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M gC12 =	0.26270 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M gC12s =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M gO12 =	0.54943 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	569.67778 (mg/s)
	mass flux of ground water into SW-005	M g5 =	7.96588 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	(5.58145) (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	1.64932 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	1,426.19365 (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	4.10576 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shi =	1.65555 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M r1 =	358.1767 (mg/s)
	mass flux in river at SW-002	M r2 =	735.7078 (mg/s)
	mass flux in river at SW-003	M r3 =	980.4407 (mg/s)
	mass flux in river at SW-004	M r4 =	1,245.2970 (mg/s)
	mass flux in river at SW-004A	M r4A =	4,216.4014 (mg/s)
	mass flux in river at SW-005	M r5 =	4,794.0450 (mg/s)
	mass flux in river at USGS Gage	M r6 =	4,795.6944 (mg/s)
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C r1 =	0.14829 (mg/L)
	concentration in river at SW-002	C r2 =	0.14912 (mg/L)
	concentration in river at SW-003	C r3 =	0.14940 (mg/L)
	concentration in river at SW-004	C r4 =	0.14951 (mg/L)
	concentration in river at SW-004A	C r4A =	0.14785 (mg/L)
	concentration in river at SW-005	C r5 =	0.14805 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.14821 (mg/L)
	concentration in Colby Lake	C cl =	0.14675 (mg/L)

Partridge River Mass-Balance--Mine Site-Proposed Action

Case Parameter	Post-Closure Sodium		
Input concentration data	High Flow Conditions	C s1 =	2.5000 (mg/L)
	concentration of surface water into SW-002	C s2 =	2.5000 (mg/L)
	concentration of surface water into SW-003	C s3 =	2.5000 (mg/L)
	concentration of surface water into SW-004	C s4 =	2.5000 (mg/L)
	concentration of surface water into SW-004A	C s4A =	2.5000 (mg/L)
	concentration of surface water into SW-005	C s5 =	2.5000 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	2.5000 (mg/L)
	concentration of surface water into Colby Lake	C scl =	2.5000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shi =	2.5000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	4.8000 (mg/L)
	concentration of West Pit overflow	C sms =	162.1579 (mg/L)
	concentration of ground water into SW-001	C g1 =	13.3300 (mg/L)
	concentration of ground water into SW-002	C g2 =	13.3300 (mg/L)
	concentration of ground water into SW-003	C g3 =	13.3300 (mg/L)
	concentration of ground water into SW-004	C g4 =	13.3300 (mg/L)
	concentration of ground water into SW-004A	C g4A =	13.3300 (mg/L)
	concentration of ground water into SW-005	C g5 =	13.3300 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	13.3300 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	13.3300 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	163.4859 (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	162.1579 (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	307.8723 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	338.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	338.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	338.0000 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	7.1900 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	307.8723 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C gC3s =	338.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	338.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	338.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	4.6000 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	13.3300 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	13.3300 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	13.3300 (mg/L)
	concentration of liner leakage from WWTF pond	C gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	5,955.02750 (mg/s)
	mass flux of ground water into SW-001	M g1 =	67.90302 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	135.84000 (mg/s)
	mass flux of surface water into SW-002	M s2 =	6,276.53684 (mg/s)
	mass flux of ground water into SW-002	M g2 =	100.93613 (mg/s)
	mass flux of surface water into SW-003	M s3 =	4,064.26385 (mg/s)
	mass flux of ground water into SW-003	M g3 =	40.19169 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	51.58717 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M gC3_003 =	1.50827 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	1.69004 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M gC3s_003 =	0.00018 (mg/s)
	mass flux of surface water into SW-004	M s4 =	4,390.42430 (mg/s)
	mass flux of ground water into SW-004	M g4 =	117.73415 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	51.58717 (mg/s)
	mass flux of seepage from West Pit	M gwp =	184.20521 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M gC3_004 =	1.50827 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	1.69004 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.22127 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00033 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00015 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M s4A =	49,356.85081 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	522.73125 (mg/s)
	mass flux of West Pit overflow	M sms =	65,164.77132 (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M gC12 =	196.30995 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M gC12s =	0.00675 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M gO12 =	34.05501 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	9,494.62974 (mg/s)
	mass flux of ground water into SW-005	M g5 =	856.33253 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	(93.02413) (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	177.30233 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	23,769.87750 (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	441.36963 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shi =	27.59250 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M r1 =	6,158.7705 (mg/s)
	mass flux in river at SW-002	M r2 =	12,536.2435 (mg/s)
	mass flux in river at SW-003	M r3 =	16,995.4847 (mg/s)
	mass flux in river at SW-004	M r4 =	21,441.3475 (mg/s)
	mass flux in river at SW-004A	M r4A =	136,716.0726 (mg/s)
	mass flux in river at SW-005	M r5 =	147,067.0349 (mg/s)
	mass flux in river at USGS Gage	M r6 =	147,244.3372 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M cl =	171,483.1768 (mg/s)
	High Flow		
	concentration in river at SW-001	C r1 =	2.54979 (mg/L)
	concentration in river at SW-002	C r2 =	2.54100 (mg/L)
	concentration in river at SW-003	C r3 =	2.54402 (mg/L)
	concentration in river at SW-004	C r4 =	2.57427 (mg/L)
	concentration in river at SW-004A	C r4A =	4.79398 (mg/L)
	concentration in river at SW-005	C r5 =	4.54186 (mg/L)
	concentration in river at USGS Gage	C r6 =	4.55069 (mg/L)
	concentration in Colby Lake	C cl =	5.24964 (mg/L)

Partridge River Mass-Balance--Mine Site-Proposed Action

Case Parameter	Post-Closure Nickel		
Input concentration data	High Flow Conditions	C s1 =	0.0016 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0016 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0016 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0016 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0016 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0016 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0016 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0016 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shi =	0.0033 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0016 (mg/L)
	concentration of West Pit overflow	C sms =	0.0637 (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0163 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0163 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0163 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0163 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0163 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0163 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0163 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0163 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	0.0151 (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	0.0637 (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	0.1223 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	762.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	762.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	762.0000 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	0.0190 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	0.1223 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C gC3s =	762.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	762.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	762.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0080 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0163 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0163 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0163 (mg/L)
	concentration of liner leakage from WWTF pond	C gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	3.71594 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.08293 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.04387 (mg/s)
	mass flux of surface water into SW-002	M s2 =	3.91656 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.12327 (mg/s)
	mass flux of surface water into SW-003	M s3 =	2.53610 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.04909 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	0.00478 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M gC3_003 =	3.40031 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	3.81010 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M gC3s_003 =	0.00040 (mg/s)
	mass flux of surface water into SW-004	M s4 =	2.73962 (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.14379 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	0.00478 (mg/s)
	mass flux of seepage from West Pit	M gwp =	0.07237 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M gC3_004 =	3.81010 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	3.81010 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.49884 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00075 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00035 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M s4A =	30.79867 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.63841 (mg/s)
	mass flux of West Pit overflow	M sms =	25.60350 (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M gC12 =	0.07795 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M gO12 =	0.08999 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	5.92465 (mg/s)
	mass flux of ground water into SW-005	M g5 =	1.04584 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	(0.05805) (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.21654 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	14.83240 (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	0.53905 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shi =	0.03642 (mg/s)
Mass balance at each node	mass flux in river at SW-001	M r1 =	3.8427 (mg/s)
	mass flux in river at SW-002	M r2 =	7.8826 (mg/s)
	mass flux in river at SW-003	M r3 =	17.6833 (mg/s)
	mass flux in river at SW-004	M r4 =	24.9543 (mg/s)
	mass flux in river at SW-004A	M r4A =	82.1629 (mg/s)
	mass flux in river at SW-005	M r5 =	89.1334 (mg/s)
	mass flux in river at USGS Gage	M r6 =	89.3499 (mg/s)
	mass flux into Colby Lake	M cl =	104.7578 (mg/s)
Convert mass flux to concentration	concentration in river at SW-001	C r1 =	0.00159 (mg/L)
	concentration in river at SW-002	C r2 =	0.00160 (mg/L)
	concentration in river at SW-003	C r3 =	0.00269 (mg/L)
	concentration in river at SW-004	C r4 =	0.00300 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00288 (mg/L)
	concentration in river at SW-005	C r5 =	0.00275 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00276 (mg/L)
	concentration in Colby Lake	C cl =	0.00475 (mg/L)

Partridge River Mass-Balance--Mine Site-Proposed Action

Case Parameter	Post-Closure Lead		
Input concentration data	High Flow Conditions	C s1 =	0.0005 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0005 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0005 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0005 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0005 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0005 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0005 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0005 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shi =	0.0005 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0002 (mg/L)
	concentration of West Pit overflow	C sms =	0.0055 (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0011 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0011 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0011 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0011 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0011 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0011 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0011 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0011 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	0.0033 (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	0.0055 (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	0.0146 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	0.0528 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0528 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0528 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	0.0146 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C gC3s =	0.0528 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.0528 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0528 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0007 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0011 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0011 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0011 (mg/L)
	concentration of liner leakage from VVWTF pond	C gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M s1 =	1.19101 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.00571 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.00425 (mg/s)
	mass flux of surface water into SW-002	M s2 =	1.25531 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.00848 (mg/s)
	mass flux of surface water into SW-003	M s3 =	0.81285 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.00338 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	0.00103 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M gC3_003 =	0.00024 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00026 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	0.87808 (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.00989 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	0.00103 (mg/s)
	mass flux of seepage from West Pit	M gwp =	0.00624 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00026 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00003 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	- (mg/s)
	mass flux of liner leakage from VVWTF pond	M gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M s4A =	9.87137 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.04392 (mg/s)
	mass flux of West Pit overflow	M sms =	2.20878 (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M gC12 =	0.00931 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	1.89893 (mg/s)
	mass flux of ground water into SW-005	M g5 =	0.07195 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	(0.01860) (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.01490 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	4.75398 (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	0.03708 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shi =	0.00552 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M r1 =	1.2010 (mg/s)
	mass flux in river at SW-002	M r2 =	2.4647 (mg/s)
	mass flux in river at SW-003	M r3 =	3.2825 (mg/s)
	mass flux in river at SW-004	M r4 =	4.1781 (mg/s)
	mass flux in river at SW-004A	M r4A =	16.3114 (mg/s)
	mass flux in river at SW-005	M r5 =	18.2823 (mg/s)
	mass flux in river at USGS Gage	M r6 =	18.2972 (mg/s)
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C r1 =	0.00050 (mg/L)
	concentration in river at SW-002	C r2 =	0.00050 (mg/L)
	concentration in river at SW-003	C r3 =	0.00050 (mg/L)
	concentration in river at SW-004	C r4 =	0.00050 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00057 (mg/L)
	concentration in river at SW-005	C r5 =	0.00056 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00057 (mg/L)
	concentration in Colby Lake	C cl =	0.00059 (mg/L)

Partridge River Mass-Balance--Mine Site-Proposed Action

Case Parameter	Post-Closure Antimony		
Input concentration data	High Flow Conditions	C s1 =	0.0015 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0015 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0015 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0015 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0015 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0015 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0015 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0015 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shi =	0.0015 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0015 (mg/L)
	concentration of West Pit overflow	C sms =	0.1059 (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0015 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0015 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0015 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0015 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0015 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0015 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0015 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0015 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	0.0240 (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	0.1059 (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	0.0800 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	0.0800 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0800 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0800 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	0.0004 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	0.0800 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C gC3s =	0.0800 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.0800 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0800 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0003 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0015 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0015 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0015 (mg/L)
	concentration of liner leakage from VVWTF pond	C gWTFp =	#N/A (mg/L)
Convert concentration to mass flux			High Flow
	mass flux of surface water into SW-001	M s1 =	3.57302 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.00764 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.04245 (mg/s)
	mass flux of surface water into SW-002	M s2 =	3.76592 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.01136 (mg/s)
	mass flux of surface water into SW-003	M s3 =	2.43856 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.00452 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	0.00756 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M gC3_003 =	0.00036 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00040 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	2.63425 (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.01325 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	0.00756 (mg/s)
	mass flux of seepage from West Pit	M gwp =	0.12031 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M gC3_004 =	0.00040 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00040 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00005 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	- (mg/s)
	mass flux of liner leakage from VVWTF pond	M gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M s4A =	29.61411 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.05882 (mg/s)
	mass flux of West Pit overflow	M sms =	42.55990 (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M gC12 =	0.05101 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M gO12 =	0.00189 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	5.69678 (mg/s)
	mass flux of ground water into SW-005	M g5 =	0.09636 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	(0.05581) (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.01995 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	14.26195 (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	0.04967 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shi =	0.01656 (mg/s)
Mass balance at each node			High Flow
	mass flux in river at SW-001	M r1 =	3.6231 (mg/s)
	mass flux in river at SW-002	M r2 =	7.4004 (mg/s)
	mass flux in river at SW-003	M r3 =	9.8518 (mg/s)
	mass flux in river at SW-004	M r4 =	12.6276 (mg/s)
	mass flux in river at SW-004A	M r4A =	84.9133 (mg/s)
	mass flux in river at SW-005	M r5 =	90.7065 (mg/s)
	mass flux in river at USGS Gage	M r6 =	90.7264 (mg/s)
	mass flux into Colby Lake	M cl =	105.0546 (mg/s)
Convert mass flux to concentration			High Flow
	concentration in river at SW-001	C r1 =	0.00150 (mg/L)
	concentration in river at SW-002	C r2 =	0.00150 (mg/L)
	concentration in river at SW-003	C r3 =	0.00150 (mg/L)
	concentration in river at SW-004	C r4 =	0.00152 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00298 (mg/L)
	concentration in river at SW-005	C r5 =	0.00280 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00280 (mg/L)
	concentration in Colby Lake	C cl =	0.00307 (mg/L)



Partridge River Mass-Balance--Mine Site-Proposed Action

Case Parameter	Post-Closure Selenium		
Input concentration data	High Flow Conditions	C s1 =	0.0005 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0005 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0005 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0005 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0005 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0005 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0005 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0005 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shi =	0.0005 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0005 (mg/L)
	concentration of West Pit overflow	C sms =	0.0052 (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0019 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0019 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0019 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0019 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0019 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0019 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0019 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0019 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	0.0052 (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	0.0052 (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	0.0029 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	0.0029 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0029 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0029 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	0.0019 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	0.0029 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C gC3s =	0.0029 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.0029 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0029 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0004 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0019 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0019 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0019 (mg/L)
	concentration of liner leakage from VVWTF pond	C gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	1.19101 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.00973 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.01415 (mg/s)
	mass flux of surface water into SW-002	M s2 =	1.25531 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.01446 (mg/s)
	mass flux of surface water into SW-003	M s3 =	0.81285 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.00576 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	0.00163 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M gC3_003 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	0.87808 (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.01687 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	0.00163 (mg/s)
	mass flux of seepage from West Pit	M gwp =	0.00590 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M gC3_004 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	- (mg/s)
	mass flux of liner leakage from VVWTF pond	M gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M s4A =	9.87137 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.07490 (mg/s)
	mass flux of West Pit overflow	M sms =	2.08718 (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M gC12 =	0.00185 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M gO12 =	0.00900 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	1.89893 (mg/s)
	mass flux of ground water into SW-005	M g5 =	0.12270 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	(0.01860) (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.02540 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	4.75399 (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	0.06324 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shi =	0.00552 (mg/s)
Mass balance at each node			High Flow
	mass flux in river at SW-001	M r1 =	1.2149 (mg/s)
	mass flux in river at SW-002	M r2 =	2.4847 (mg/s)
	mass flux in river at SW-003	M r3 =	3.3049 (mg/s)
	mass flux in river at SW-004	M r4 =	4.2074 (mg/s)
	mass flux in river at SW-004A	M r4A =	16.2517 (mg/s)
	mass flux in river at SW-005	M r5 =	18.2733 (mg/s)
	mass flux in river at USGS Gage	M r6 =	18.2988 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M cl =	23.1215 (mg/s)
			High Flow
	concentration in river at SW-001	C r1 =	0.00050 (mg/L)
	concentration in river at SW-002	C r2 =	0.00050 (mg/L)
	concentration in river at SW-003	C r3 =	0.00050 (mg/L)
	concentration in river at SW-004	C r4 =	0.00051 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00057 (mg/L)
	concentration in river at SW-005	C r5 =	0.00056 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00057 (mg/L)
	concentration in Colby Lake	C cl =	0.00061 (mg/L)

0.00068

Partridge River Mass-Balance--Mine Site-Proposed Action

Case Parameter	Post-Closure sulfate		
Input concentration data	High Flow Conditions	C s1 =	9.0000 (mg/L)
	concentration of surface water into SW-002	C s2 =	9.0000 (mg/L)
	concentration of surface water into SW-003	C s3 =	9.0000 (mg/L)
	concentration of surface water into SW-004	C s4 =	9.0000 (mg/L)
	concentration of surface water into SW-004A	C s4A =	9.0000 (mg/L)
	concentration of surface water into SW-005	C s5 =	9.0000 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	9.0000 (mg/L)
	concentration of surface water into Colby Lake	C scl =	9.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shi =	9.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	22.0000 (mg/L)
	concentration of West Pit overflow	C sms =	211.8408 (mg/L)
	concentration of ground water into SW-001	C g1 =	16.1300 (mg/L)
	concentration of ground water into SW-002	C g2 =	16.1300 (mg/L)
	concentration of ground water into SW-003	C g3 =	16.1300 (mg/L)
	concentration of ground water into SW-004	C g4 =	16.1300 (mg/L)
	concentration of ground water into SW-004A	C g4A =	16.1300 (mg/L)
	concentration of ground water into SW-005	C g5 =	16.1300 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	16.1300 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	16.1300 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	96.4669 (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	211.8408 (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	680.6093 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	9,600.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	9,600.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	9,600.0000 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	68.3000 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	680.6093 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C gC3s =	9,600.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	9,600.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	9,600.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	35.1700 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	16.1300 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	16.1300 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	16.1300 (mg/L)
	concentration of liner leakage from WWTF pond	C gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	21,438.09900 (mg/s)
	mass flux of ground water into SW-001	M g1 =	82.16622 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	622.60000 (mg/s)
	mass flux of surface water into SW-002	M s2 =	22,595.53261 (mg/s)
	mass flux of ground water into SW-002	M g2 =	122.13802 (mg/s)
	mass flux of surface water into SW-003	M s3 =	14,631.34988 (mg/s)
	mass flux of ground water into SW-003	M g3 =	48.63406 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	30.43966 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M gC3_003 =	42.83852 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	48.00121 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M gC3s_003 =	0.00505 (mg/s)
	mass flux of surface water into SW-004	M s4 =	15,805.52749 (mg/s)
	mass flux of ground water into SW-004	M g4 =	142.46451 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	30.43966 (mg/s)
	mass flux of seepage from West Pit	M gwp =	240.64311 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	48.00121 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	6.28454 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00942 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00438 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M s4A =	177,684.66292 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	632.53226 (mg/s)
	mass flux of West Pit overflow	M sms =	85,130.34932 (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M gC12 =	433.97980 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M gC12s =	0.01491 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M gO12 =	323.49893 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	34,180.66705 (mg/s)
	mass flux of ground water into SW-005	M g5 =	1,036.20733 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	(334.88687) (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	214.54513 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	85,571.55900 (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	534.08043 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shi =	89.33300 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M r1 =	22,142.8652 (mg/s)
	mass flux in river at SW-002	M r2 =	44,880.5359 (mg/s)
	mass flux in river at SW-003	M r3 =	59,861.8042 (mg/s)
	mass flux in river at SW-004	M r4 =	75,835.1836 (mg/s)
	mass flux in river at SW-004A	M r4A =	340,140.2217 (mg/s)
	mass flux in river at SW-005	M r5 =	375,357.0961 (mg/s)
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C r1 =	9.16735 (mg/L)
	concentration in river at SW-002	C r2 =	9.09288 (mg/L)
	concentration in river at SW-003	C r3 =	9.09113 (mg/L)
	concentration in river at SW-004	C r4 =	9.11886 (mg/L)
	concentration in river at SW-004A	C r4A =	11.92709 (mg/L)
	concentration in river at SW-005	C r5 =	11.59212 (mg/L)
	concentration in river at USGS Gage	C r6 =	11.60731 (mg/L)
	concentration in Colby Lake	C cl =	12.41389 (mg/L)

Partridge River Mass-Balance--Mine Site-Proposed Action

Case Parameter	Post-Closure Thallium		
Input concentration data	High Flow Conditions	C s1 =	0.0004 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0004 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0004 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0004 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0004 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0004 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0004 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0004 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shi =	0.0004 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0003 (mg/L)
	concentration of West Pit overflow	C sms =	0.0002 (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0000 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0000 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0000 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0000 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0000 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0000 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0000 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0000 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	0.0003 (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	0.0002 (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	0.0000 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	0.0001 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0001 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0001 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	0.0000 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C gC3s =	0.0001 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.0001 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0001 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0000 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0000 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0000 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0000 (mg/L)
	concentration of liner leakage from WWTF pond	C gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	0.95280 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.00002 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.00809 (mg/s)
	mass flux of surface water into SW-002	M s2 =	1.00425 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.00003 (mg/s)
	mass flux of surface water into SW-003	M s3 =	0.65028 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.00001 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	0.00010 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	0.70247 (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.00004 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	0.00010 (mg/s)
	mass flux of seepage from West Pit	M gwp =	0.00027 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M gC3_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M s4A =	7.89710 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.00016 (mg/s)
	mass flux of West Pit overflow	M sms =	0.09611 (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M gC12 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	1.51914 (mg/s)
	mass flux of ground water into SW-005	M g5 =	0.00026 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	(0.01488) (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.00005 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	3.80318 (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	0.00013 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shi =	0.00441 (mg/s)
Mass balance at each node			High Flow
	mass flux in river at SW-001	M r1 =	0.9609 (mg/s)
	mass flux in river at SW-002	M r2 =	1.9652 (mg/s)
	mass flux in river at SW-003	M r3 =	2.6156 (mg/s)
	mass flux in river at SW-004	M r4 =	3.3185 (mg/s)
	mass flux in river at SW-004A	M r4A =	11.3118 (mg/s)
	mass flux in river at SW-005	M r5 =	12.8312 (mg/s)
	mass flux in river at USGS Gage	M r6 =	12.8313 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M cl =	16.6390 (mg/s)
			High Flow
	concentration in river at SW-001	C r1 =	0.00040 (mg/L)
	concentration in river at SW-002	C r2 =	0.00040 (mg/L)
	concentration in river at SW-003	C r3 =	0.00040 (mg/L)
	concentration in river at SW-004	C r4 =	0.00040 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00040 (mg/L)
	concentration in river at SW-005	C r5 =	0.00040 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00040 (mg/L)
	concentration in Colby Lake	C cl =	0.00039 (mg/L)

0.00037

Partridge River Mass-Balance--Mine Site-Proposed Action

Case Parameter	Post-Closure Vanadium		
Input concentration data	High Flow Conditions	C s1 =	0.0009 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0009 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0009 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0009 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0009 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0009 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0009 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0009 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shi =	0.0009 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0043 (mg/L)
	concentration of West Pit overflow	C sms =	0.0778 (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0043 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0043 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0043 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0043 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0043 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0043 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0043 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0043 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	0.0192 (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	0.0778 (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	0.4508 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	6.8930 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	8.6360 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.4179 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	0.0014 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	0.4508 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C gC3s =	6.8930 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	8.6360 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.4179 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0017 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0043 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0043 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0043 (mg/L)
	concentration of liner leakage from VVWTF pond	C gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	2.14381 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.02190 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.12169 (mg/s)
	mass flux of surface water into SW-002	M s2 =	2.25955 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.03256 (mg/s)
	mass flux of surface water into SW-003	M s3 =	1.46313 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.01297 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	0.00605 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M gC3_003 =	0.03076 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.04318 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	1.58055 (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.03798 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	0.00805 (mg/s)
	mass flux of seepage from West Pit	M gwp =	0.08842 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M gC3_004 =	0.03076 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.04318 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00027 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	- (mg/s)
	mass flux of liner leakage from VVWTF pond	M gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M s4A =	17.76847 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.16862 (mg/s)
	mass flux of West Pit overflow	M sms =	31.28065 (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M gC12 =	0.28743 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M gC12s =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M gO12 =	0.00663 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	3.41807 (mg/s)
	mass flux of ground water into SW-005	M g5 =	0.27624 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	(0.03349) (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.05719 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	0.55718 (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	0.14238 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shi =	0.00993 (mg/s)
Mass balance at each node			High Flow
	mass flux in river at SW-001	M r1 =	2.2874 (mg/s)
	mass flux in river at SW-002	M r2 =	4.5795 (mg/s)
	mass flux in river at SW-003	M r3 =	6.1356 (mg/s)
	mass flux in river at SW-004	M r4 =	7.8921 (mg/s)
	mass flux in river at SW-004A	M r4A =	57.4039 (mg/s)
	mass flux in river at SW-005	M r5 =	61.0982 (mg/s)
	mass flux in river at USGS Gage	M r6 =	61.1554 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M cl =	69.8649 (mg/s)
			High Flow
	concentration in river at SW-001	C r1 =	0.00095 (mg/L)
	concentration in river at SW-002	C r2 =	0.00093 (mg/L)
	concentration in river at SW-003	C r3 =	0.00093 (mg/L)
	concentration in river at SW-004	C r4 =	0.00095 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00201 (mg/L)
	concentration in river at SW-005	C r5 =	0.00189 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00189 (mg/L)
	concentration in Colby Lake	C cl =	0.00223 (mg/L)

Partridge River Mass-Balance--Mine Site-Proposed Action

Case Parameter	Post-Closure Zinc		
Input concentration data	High Flow Conditions	C s1 =	0.0160 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0160 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0160 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0160 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0160 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0160 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0160 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0160 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shi =	0.0620 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0073 (mg/L)
	concentration of West Pit overflow	C sms =	0.0486 (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0275 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0275 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0275 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0275 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0275 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0275 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0275 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0275 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	0.0236 (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	0.0486 (mg/L)
	concentration of liner leakage from Cat 1/2 stockpile	C gC12 =	0.0900 (mg/L)
	concentration of liner leakage from Cat 3 stockpile	C gC3 =	26.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	26.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	26.0000 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1/2)	C gO12 =	0.0030 (mg/L)
	concentration of liner leakage from Cat 1/2 sumps	C gC12s =	0.0900 (mg/L)
	concentration of liner leakage from Cat 3 sumps	C gC3s =	26.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	26.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	26.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0046 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0275 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0275 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0275 (mg/L)
	concentration of liner leakage from WWTF pond	C gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M s1 =	38.11218 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.14009 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.20744 (mg/s)
	mass flux of surface water into SW-002	M s2 =	40.16984 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.20823 (mg/s)
	mass flux of surface water into SW-003	M s3 =	26.01129 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.08292 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	0.00746 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-003	M gC3_003 =	0.11602 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.13000 (mg/s)
	mass flux of liner leakage from Cat 3 sumps to SW-003	M gC3s_003 =	0.00001 (mg/s)
	mass flux of surface water into SW-004	M s4 =	28.09872 (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.24289 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	0.00746 (mg/s)
	mass flux of seepage from West Pit	M gwp =	0.05516 (mg/s)
	mass flux of liner leakage from Cat 3 stockpile to SW-004	M gC3_004 =	0.13000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.13000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.01702 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00003 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00001 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M s4A =	315.88385 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	1.07840 (mg/s)
	mass flux of West Pit overflow	M sms =	19.51235 (mg/s)
	mass flux of liner leakage from Cat 1/2 stockpile	M gC12 =	0.05739 (mg/s)
	mass flux of liner leakage from Cat 1/2 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1/2)	M gO12 =	0.01421 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	60.76563 (mg/s)
	mass flux of ground water into SW-005	M g5 =	1.76663 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	(0.59535) (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.36578 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	152.12722 (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	0.81055 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shi =	0.68429 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M r1 =	38.4597 (mg/s)
	mass flux in river at SW-002	M r2 =	78.6376 (mg/s)
	mass flux in river at SW-003	M r3 =	105.1856 (mg/s)
	mass flux in river at SW-004	M r4 =	133.7368 (mg/s)
	mass flux in river at SW-004A	M r4A =	470.2830 (mg/s)
	mass flux in river at SW-005	M r5 =	532.8152 (mg/s)
	mass flux in river at USGS Gage	M r6 =	533.1810 (mg/s)
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C r1 =	0.01592 (mg/L)
	concentration in river at SW-002	C r2 =	0.01596 (mg/L)
	concentration in river at SW-003	C r3 =	0.01603 (mg/L)
	concentration in river at SW-004	C r4 =	0.01606 (mg/L)
	concentration in river at SW-004A	C r4A =	0.01649 (mg/L)
	concentration in river at SW-005	C r5 =	0.01645 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.01648 (mg/L)
	concentration in Colby Lake	C cl =	0.01692 (mg/L)

***Appendix H.8***  
***Partridge River***  
***Reasonable Alternative***  
***Year 1***



## Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

### FLOWS

Case	Year 1			
Flows	Low Flow Conditions (no surface runoff)			
Total flow in Partridge River	flow in river at SW-001	Q_r1_L =	1.18	(cfs)
	flow in river at SW-002	Q_r2_L =	1.54	(cfs)
	flow in river at SW-003	Q_r3_L =	1.65	(cfs)
	flow in river at SW-004	Q_r4_L =	2.07	(cfs)
	flow in river at SW-004A	Q_r4a_L =	3.51	(cfs)
	flow in river at SW-005	Q_r5_L =	5.78	(cfs)
	flow in river at USGS	Q_r6_L =	6.25	(cfs)
	total flow into Colby Lake	Q_cl_L =	7.81	(cfs)
	flow check	Q_ck_L =	7.81	(cfs)
Input flow data	surface water flow into SW-001	Q_s1_L =	-	(cfs)
	surface water flow into SW-002	Q_s2_L =	-	(cfs)
	surface water flow into SW-003	Q_s3_L =	-	(cfs)
	surface water flow into SW-004	Q_s4_L =	-	(cfs)
	surface water flow into SW-004A	Q_s4a_L =	-	(cfs)
	surface water flow into SW-005	Q_s5_L =	-	(cfs)
	surface water flow into USGS Gage	Q_s6_L =	-	(cfs)
	surface water flow into Colby Lake	Q_scl_L =	-	(cfs)
	surface water inflow from Hoyt Lakes WWTP	Q_shl_L =	0.39	(cfs)
	surface water inflow from discharges upstream of PM-1	Q_sns_L =	1.00	(cfs)
	surface water flow from West Pit overflow	Q_sms_L =	-	(cfs)
	ground water flow into SW-001	Q_g1_L =	0.18	(cfs)
	ground water flow into SW-002	Q_g2_L =	0.36	(cfs)
	ground water flow into SW-003	Q_g3_L =	0.11	(cfs)
	ground water flow into SW-004	Q_g4_L =	0.32	(cfs)
	ground water flow into SW-004A	Q_g4a_L =	1.39	(cfs)
	ground water flow into SW-005	Q_g5_L =	2.27	(cfs)
	ground water flow into USGS Gage	Q_g6_L =	0.47	(cfs)
	ground water flow into Colby Lake	Q_gcl_L =	1.17	(cfs)
	ground water seepage from East Pit to SW-003	Q_gep_003_L =	-	(cfs)
	ground water seepage from East Pit to SW-004	Q_gep_004_L =	-	(cfs)
	ground water seepage from West Pit	Q_gwp_L =	-	(cfs)
	ground water liner leakage from Cat 1 stockpile	Q_gC12_L =	-	(cfs)
	ground water liner leakage from Cat 2/3 stockpile to SW-003	Q_gC3_003_L =	0.0000	(cfs)
	ground water liner leakage from Cat 2/3 stockpile to SW-004	Q_gC3_004_L =	-	(cfs)
	ground water liner leakage from Cat 3LO stockpile to SW-003	Q_gC3LO_003_L =	0.0000	(cfs)
	ground water liner leakage from Cat 3LO stockpile to SW-004	Q_gC3LO_004_L =	0.0000	(cfs)
	ground water liner leakage from Cat 4 stockpile	Q_gC4_L =	0.0000	(cfs)
	ground water liner leakage from LO SP	Q_gC4LO_L =	0.0000	(cfs)
	ground water seepage from Overburden Storage	Q_gOS_L =	0.0765	(cfs)
	ground water seepage from Overburden (Cat 1)	Q_gO12_L =	0.0198	(cfs)
	ground water liner leakage from Cat 1 sumps	Q_gC12s_L =	0.0000	(cfs)
	ground water liner leakage from Cat 2/3 sumps	Q_gC3s_L =	0.0000	(cfs)
	ground water liner leakage from Cat 3LO sumps	Q_gC3LOs_L =	0.0000	(cfs)
	ground water liner leakage from Cat 4 sumps	Q_gC4s_L =	0.0000	(cfs)
	ground water liner leakage from LO SP sumps	Q_gC4LOs_L =	0.0000	(cfs)
	ground water seepage from Overburden pond - PW1	Q_gOp1_L =	0.0189	(cfs)
	ground water seepage from Overburden pond - PW7	Q_gOp7_L =	0.0355	(cfs)
	ground water leakage from Haul Road pond - PW2	Q_gHRp2_L =	0.0000	(cfs)
	ground water leakage from Haul Road pond - PW4	Q_gHRp4_L =	0.0000	(cfs)
	ground water leakage from RTH pond - PW3	Q_gRTHp_L =	0.0000	(cfs)
	ground water liner leakage from WWTF pond	Q_gWTFp_L =	0.000076	(cfs)

Case	Year 1
Parameter	Silver

			Low Flow
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	(mg/s)
	mass flux of ground water into SW-001	M q1 =	0.00280 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.00340 (mg/s)
	mass flux of surface water into SW-002	M s2 =	- (mg/s)
	mass flux of ground water into SW-002	M q2 =	0.00559 (mg/s)
	mass flux of surface water into SW-003	M s3 =	- (mg/s)
	mass flux of ground water into SW-003	M q3 =	0.00168 (mg/s)
	mass flux of seepage from East Pit to SW-003	M dep 003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M qC3 003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M qC3LO 003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M qC3s 003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	(mg/s)
	mass flux of ground water into SW-004	M q4 =	0.00503 (mg/s)
	mass flux of seepage from East Pit to SW-004	M dep 004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M awp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M qC3 004 =	(mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M qC3LO 004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M qC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M qC4LO =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Storage)	M qOS =	(mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M qC3LOs 004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M qC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M qC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M qOp1 =	(mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M qHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M qHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M qRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M qWTFp =	0.00000 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	(mg/s)
	mass flux of ground water into SW-004A	M q4A =	0.02166 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M qC12 =	(mg/s)
	mass flux of liner leakage from Cat 1 sumps	M qC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M qO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M qOp7 =	- (mg/s)
	mass flux of surface water into SW-005	M s5 =	(mg/s)
	mass flux of ground water into SW-005	M q5 =	0.03533 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	(mg/s)
	mass flux of ground water into USGS Gage	M q6 =	0.00732 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	(mg/s)
mass flux of ground water into Colby Lake	M qcl =	0.01821 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shi =	0.00110 (mg/s)	
			Low Flow
Mass balance at each node	mass flux in river at SW-001	M r1 =	0.0062 (mg/s)
	mass flux in river at SW-002	M r2 =	0.0118 (mg/s)
	mass flux in river at SW-003	M r3 =	0.0135 (mg/s)
	mass flux in river at SW-004	M r4 =	0.0185 (mg/s)
	mass flux in river at SW-004A	M r4A =	0.0402 (mg/s)
	mass flux in river at SW-005	M r5 =	0.0755 (mg/s)
	mass flux in river at USGS Gage	M r6 =	0.0828 (mg/s)
	mass flux into Colby Lake	M ci =	0.1021 (mg/s)
			Low Flow
Convert mass flux to concentration	concentration in river at SW-001	C r1 =	0.00019 (mg/L)
	concentration in river at SW-002	C r2 =	0.00027 (mg/L)
	concentration in river at SW-003	C r3 =	0.00029 (mg/L)
	concentration in river at SW-004	C r4 =	0.00032 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00040 (mg/L)
	concentration in river at SW-005	C r5 =	0.00046 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00047 (mg/L)
	concentration in Colby Lake (H	C ci =	0.00015 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 1 Aluminum		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0700 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0700 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0700 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0700 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0700 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0700 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0700 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0700 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0700 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0173 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.1250 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.1250 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.1250 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.1250 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.1250 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.1250 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.1250 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.1250 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	1.6800 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	1.6800 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	1.6800 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	1.6800 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	3.8859 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.4106 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.1400 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	1.6800 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	1.6800 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	1.6800 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	1.6800 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	3.8859 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.4106 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	0.4106 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.1250 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.1250 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.1250 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	1.1077 (mg/L)
			Low Flow
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	(mg/s)
	mass flux of ground water into SW-001	M g1 =	0.63675 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.48959 (mg/s)
	mass flux of surface water into SW-002	M s2 =	(mg/s)
	mass flux of ground water into SW-002	M g2 =	1.27124 (mg/s)
	mass flux of surface water into SW-003	M s3 =	(mg/s)
	mass flux of ground water into SW-003	M g3 =	0.38160 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep 003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3 003 =	0.00009 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO 003 =	0.00004 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s 003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	(mg/s)
	mass flux of ground water into SW-004	M g4 =	1.14217 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep 004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3 004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO 004 =	0.00004 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00001 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00051 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.88859 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs 004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00001 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.21972 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00005 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00010 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00237 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M g4A =	4.92269 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00004 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	0.07858 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	0.41280 (mg/s)
	mass flux of surface water into SW-005	M s5 =	- (mg/s)
	mass flux of ground water into SW-005	M g5 =	8.03013 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	1.66263 (mg/s)
mass flux of surface water into Colby Lake	M scl =	- (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	4.13888 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.77259 (mg/s)	
			Low Flow
Mass balance at each node	mass flux in river at SW-001	M r1 =	1.1263 (mg/s)
	mass flux in river at SW-002	M r2 =	2.3976 (mg/s)
	mass flux in river at SW-003	M r3 =	2.7793 (mg/s)
	mass flux in river at SW-004	M r4 =	5.0329 (mg/s)
	mass flux in river at SW-004A	M r4A =	10.4470 (mg/s)
	mass flux in river at SW-005	M r5 =	18.4771 (mg/s)
	mass flux in river at USGS Gage	M r6 =	20.1397 (mg/s)
mass flux into Colby Lake	M cl =	25.0512 (mg/s)	
Convert mass flux to concentration	concentration in river at SW-001	C r1 =	0.03373 (mg/L)
	concentration in river at SW-002	C r2 =	0.05504 (mg/L)
	concentration in river at SW-003	C r3 =	0.05962 (mg/L)
	concentration in river at SW-004	C r4 =	0.08610 (mg/L)
	concentration in river at SW-004A	C r4A =	0.10510 (mg/L)
	concentration in river at SW-005	C r5 =	0.11291 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.11382 (mg/L)
	concentration in Colby Lake (H	C cl =	0.07635 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 1 Arsenic		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0021 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0021 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0021 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0021 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0021 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0021 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0021 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0021 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0021 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0065 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0022 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0022 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0022 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0022 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0022 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0022 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0022 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0022 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.0294 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.7100 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.7100 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.7100 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.0039 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0016 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.0027 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.0294 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.7100 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.7100 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.7100 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0039 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0016 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	0.0016 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0022 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0022 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0022 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	0.0475 (mg/L)
			Low Flow
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	(mg/s)
	mass flux of ground water into SW-001	M g1 =	0.01100 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.18395 (mg/s)
	mass flux of surface water into SW-002	M s2 =	(mg/s)
	mass flux of ground water into SW-002	M g2 =	0.02197 (mg/s)
	mass flux of surface water into SW-003	M s3 =	(mg/s)
	mass flux of ground water into SW-003	M g3 =	0.00659 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep 003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3 003 =	0.00004 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO 003 =	0.00002 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s 003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	(mg/s)
	mass flux of ground water into SW-004	M g4 =	0.01974 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep 004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3 004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO 004 =	0.00002 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.00338 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs 004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.00083 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00010 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.08506 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	0.00152 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	0.00157 (mg/s)
	mass flux of surface water into SW-005	M s5 =	- (mg/s)
	mass flux of ground water into SW-005	M g5 =	0.13876 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.02873 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	0.07152 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.02329 (mg/s)
Mass balance at each node	mass flux in river at SW-001	M r1 =	0.1950 (mg/s)
	mass flux in river at SW-002	M r2 =	0.2169 (mg/s)
	mass flux in river at SW-003	M r3 =	0.2236 (mg/s)
	mass flux in river at SW-004	M r4 =	0.2476 (mg/s)
	mass flux in river at SW-004A	M r4A =	0.3358 (mg/s)
	mass flux in river at SW-005	M r5 =	0.4746 (mg/s)
	mass flux in river at USGS Gage	M r6 =	0.5033 (mg/s)
	mass flux into Colby Lake	M cl =	0.5981 (mg/s)
			Low Flow
Convert mass flux to concentration	concentration in river at SW-001	C r1 =	0.00584 (mg/L)
	concentration in river at SW-002	C r2 =	0.00498 (mg/L)
	concentration in river at SW-003	C r3 =	0.00480 (mg/L)
	concentration in river at SW-004	C r4 =	0.00424 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00338 (mg/L)
	concentration in river at SW-005	C r5 =	0.00290 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00284 (mg/L)
	concentration in Colby Lake (H)	C cl =	0.00220 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 1 Boron			
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0450 (mg/L)	
	concentration of surface water into SW-002	C s2 =	0.0450 (mg/L)	
	concentration of surface water into SW-003	C s3 =	0.0450 (mg/L)	
	concentration of surface water into SW-004	C s4 =	0.0450 (mg/L)	
	concentration of surface water into SW-004A	C s4A =	0.0450 (mg/L)	
	concentration of surface water into SW-005	C s5 =	0.0450 (mg/L)	
	concentration of surface water into USGS Gage	C s6 =	0.0450 (mg/L)	
	concentration of surface water into Colby Lake	C scl =	0.0450 (mg/L)	
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0450 (mg/L)	
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0960 (mg/L)	
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)	
	concentration of ground water into SW-001	C g1 =	0.0870 (mg/L)	
	concentration of ground water into SW-002	C g2 =	0.0870 (mg/L)	
	concentration of ground water into SW-003	C g3 =	0.0870 (mg/L)	
	concentration of ground water into SW-004	C g4 =	0.0870 (mg/L)	
	concentration of ground water into SW-004A	C g4A =	0.0870 (mg/L)	
	concentration of ground water into SW-005	C g5 =	0.0870 (mg/L)	
	concentration of ground water into USGS Gage	C g6 =	0.0870 (mg/L)	
	concentration of ground water into Colby Lake	C gcl =	0.0870 (mg/L)	
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)	
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)	
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.1100 (mg/L)	
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.7600 (mg/L)	
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.7600 (mg/L)	
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.7600 (mg/L)	
	concentration of liner leakage from LOSP	C gC4LO =	0.1291 (mg/L)	
	concentration of seepage from Overburden (Storage)	C gOS =	0.0622 (mg/L)	
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.0370 (mg/L)	
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.1100 (mg/L)	
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.7600 (mg/L)	
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.7600 (mg/L)	
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.7600 (mg/L)	
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.1291 (mg/L)	
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0622 (mg/L)	
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	0.0622 (mg/L)	
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0870 (mg/L)	
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0870 (mg/L)	
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0870 (mg/L)	
	concentration of liner leakage from WWTF ponc	C_gWTFp =	0.1253 (mg/L)	
				Low Flow
	Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	(mg/s)
		mass flux of ground water into SW-001	M g1 =	0.44318 (mg/s)
		mass flux of surface discharges from upstream of PM-1	M sns =	2.71680 (mg/s)
mass flux of surface water into SW-002		M s2 =	(mg/s)	
mass flux of ground water into SW-002		M g2 =	0.88478 (mg/s)	
mass flux of surface water into SW-003		M s3 =	(mg/s)	
mass flux of ground water into SW-003		M g3 =	0.26559 (mg/s)	
mass flux of seepage from East Pit to SW-003		M gep_003 =	#N/A (mg/s)	
mass flux of liner leakage from Cat 2/3 stockpile to SW-003		M gC3_003 =	0.00004 (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-003		M gC3LO_003 =	0.00002 (mg/s)	
mass flux of liner leakage from Cat 2/3 sumps to SW-003		M gC3s_003 =	0.00000 (mg/s)	
mass flux of surface water into SW-004		M s4 =	(mg/s)	
mass flux of ground water into SW-004		M g4 =	0.79495 (mg/s)	
mass flux of seepage from East Pit to SW-004		M gep_004 =	#N/A (mg/s)	
mass flux of seepage from West Pit		M gwp =	#N/A (mg/s)	
mass flux of liner leakage from Cat 2/3 stockpile to SW-004		M gC3_004 =	- (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-004		M gC3LO_004 =	0.00002 (mg/s)	
mass flux of liner leakage from Cat 4 stockpile		M gC4 =	0.00000 (mg/s)	
mass flux of liner leakage from LOSP		M gC4LO =	0.00002 (mg/s)	
mass flux of seepage from Overburden (Storage)		M gOS =	0.13461 (mg/s)	
mass flux of liner leakage from Cat 3LO sumps to SW-004		M gC3LOs_004 =	0.00000 (mg/s)	
mass flux of liner leakage from Cat 4 sumps		M gC4s =	0.00000 (mg/s)	
mass flux of liner leakage from LOSP sumps		M gC4LOs =	0.00000 (mg/s)	
mass flux of seepage from Overburden Ponds - PW1		M gOp1 =	0.03328 (mg/s)	
mass flux of leakage from Haul Road Pond - PW2		M gHRp2 =	0.00003 (mg/s)	
mass flux of leakage from Haul Road Pond - PW4		M gHRp4 =	0.00007 (mg/s)	
mass flux of leakage from RTH Pond - PW3		M gRTHp =	0.00000 (mg/s)	
mass flux of liner leakage from WWTF pond		M gWTFp =	0.00027 (mg/s)	
mass flux of surface water into SW-004A		M s4A =	- (mg/s)	
mass flux of ground water into SW-004A		M g4A =	3.42619 (mg/s)	
mass flux of West Pit overflow		M sms =	#N/A (mg/s)	
mass flux of liner leakage from Cat 1 stockpile		M gC12 =	- (mg/s)	
mass flux of liner leakage from Cat 1 sumps		M gC12s =	0.00000 (mg/s)	
mass flux of seepage from Overburden (Cat 1)		M gO12 =	0.02077 (mg/s)	
mass flux of seepage from Overburden Pond - PW7		M gOp7 =	0.06253 (mg/s)	
mass flux of surface water into SW-005		M s5 =	- (mg/s)	
mass flux of ground water into SW-005		M g5 =	5.58897 (mg/s)	
mass flux of surface water into USGS Gage		M s6 =	- (mg/s)	
mass flux of ground water into USGS Gage		M g6 =	1.15719 (mg/s)	
mass flux of surface water into Colby Lake		M scl =	- (mg/s)	
mass flux of ground water into Colby Lake		M gcl =	2.88066 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP		M shl =	0.49667 (mg/s)	
			Low Flow	
Mass balance at each node	mass flux in river at SW-001	M r1 =	3.1600 (mg/s)	
	mass flux in river at SW-002	M r2 =	4.0448 (mg/s)	
	mass flux in river at SW-003	M r3 =	4.3104 (mg/s)	
	mass flux in river at SW-004	M r4 =	5.2737 (mg/s)	
	mass flux in river at SW-004A	M r4A =	8.7832 (mg/s)	
	mass flux in river at SW-005	M r5 =	14.3721 (mg/s)	
	mass flux in river at USGS Gage	M r6 =	15.5293 (mg/s)	
	mass flux into Colby Lake	M cl =	18.9066 (mg/s)	
			Low Flow	
Convert mass flux to concentration	concentration in river at SW-001	C r1 =	0.09463 (mg/L)	
	concentration in river at SW-002	C r2 =	0.09285 (mg/L)	
	concentration in river at SW-003	C r3 =	0.09246 (mg/L)	
	concentration in river at SW-004	C r4 =	0.09021 (mg/L)	
	concentration in river at SW-004A	C r4A =	0.08836 (mg/L)	
	concentration in river at SW-005	C r5 =	0.08782 (mg/L)	
	concentration in river at USGS Gage	C r6 =	0.08776 (mg/L)	
	concentration in Colby Lake (H)	C cl =	0.05094 (mg/L)	

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 1 Barium		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0077 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0077 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0077 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0077 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0077 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0077 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0077 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0077 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0077 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0050 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0219 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0219 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0219 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0219 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0219 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0219 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0219 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0219 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.1900 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.1900 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.1900 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.1900 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.0329 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0168 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.0140 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.1900 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.1900 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.1900 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.1900 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0329 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0168 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	0.0168 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0219 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0219 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0219 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	0.0761 (mg/L)
			Low Flow
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	(mg/s)
	mass flux of ground water into SW-001	M g1 =	0.11166 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.14150 (mg/s)
	mass flux of surface water into SW-002	M s2 =	(mg/s)
	mass flux of ground water into SW-002	M g2 =	0.22292 (mg/s)
	mass flux of surface water into SW-003	M s3 =	(mg/s)
	mass flux of ground water into SW-003	M g3 =	0.06692 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	(mg/s)
	mass flux of ground water into SW-004	M g4 =	0.20029 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.03643 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.00901 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00001 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00002 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00016 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.86324 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	0.00786 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	0.01692 (mg/s)
	mass flux of surface water into SW-005	M s5 =	- (mg/s)
	mass flux of ground water into SW-005	M g5 =	1.40816 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.29156 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	0.72579 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.08476 (mg/s)
			Low Flow
Mass balance at each node	mass flux in river at SW-001	M r1 =	0.2532 (mg/s)
	mass flux in river at SW-002	M r2 =	0.4761 (mg/s)
	mass flux in river at SW-003	M r3 =	0.5430 (mg/s)
	mass flux in river at SW-004	M r4 =	0.7869 (mg/s)
	mass flux in river at SW-004A	M r4A =	1.6770 (mg/s)
	mass flux in river at SW-005	M r5 =	3.0851 (mg/s)
	mass flux in river at USGS Gage	M r6 =	3.3767 (mg/s)
	mass flux into Colby Lake	M cl =	4.1872 (mg/s)
Convert mass flux to concentration	concentration in river at SW-001	C r1 =	0.00758 (mg/L)
	concentration in river at SW-002	C r2 =	0.01093 (mg/L)
	concentration in river at SW-003	C r3 =	0.01165 (mg/L)
	concentration in river at SW-004	C r4 =	0.01350 (mg/L)
	concentration in river at SW-004A	C r4A =	0.01687 (mg/L)
	concentration in river at SW-005	C r5 =	0.01885 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.01908 (mg/L)
	concentration in Colby Lake (H)	C cl =	0.00933 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 1 Beryllium		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0001 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0001 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0001 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0001 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0001 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0001 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0001 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0001 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0001 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0001 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0001 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0001 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0001 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0001 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0001 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0001 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0001 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0001 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0002 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0002 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.0023 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	- (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.0002 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0002 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0023 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	- (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	- (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0001 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0001 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0001 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0005 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	- (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.00074 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.00283 (mg/s)
	mass flux of surface water into SW-002	M s2 =	- (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.00147 (mg/s)
	mass flux of surface water into SW-003	M s3 =	- (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.00044 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	- (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.00132 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	- (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00000 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.00571 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	- (mg/s)
	mass flux of surface water into SW-005	M s5 =	- (mg/s)
	mass flux of ground water into SW-005	M g5 =	0.00931 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.00193 (mg/s)
mass flux of surface water into Colby Lake	M scl =	- (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	0.00480 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.00110 (mg/s)	
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M r1 =	0.0036 (mg/s)
	mass flux in river at SW-002	M r2 =	0.0050 (mg/s)
	mass flux in river at SW-003	M r3 =	0.0055 (mg/s)
	mass flux in river at SW-004	M r4 =	0.0068 (mg/s)
	mass flux in river at SW-004A	M r4A =	0.0125 (mg/s)
	mass flux in river at SW-005	M r5 =	0.0218 (mg/s)
	mass flux in river at USGS Gage	M r6 =	0.0238 (mg/s)
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C r1 =	0.00011 (mg/L)
	concentration in river at SW-002	C r2 =	0.00012 (mg/L)
	concentration in river at SW-003	C r3 =	0.00012 (mg/L)
	concentration in river at SW-004	C r4 =	0.00012 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00013 (mg/L)
	concentration in river at SW-005	C r5 =	0.00013 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00013 (mg/L)
	concentration in Colby Lake (H)	C cl =	0.00011 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 1 Calcium		
Input concentration data	concentration of surface water into SW-001	C s1 =	17.0000 (mg/L)
	concentration of surface water into SW-002	C s2 =	17.0000 (mg/L)
	concentration of surface water into SW-003	C s3 =	17.0000 (mg/L)
	concentration of surface water into SW-004	C s4 =	17.0000 (mg/L)
	concentration of surface water into SW-004A	C s4A =	17.0000 (mg/L)
	concentration of surface water into SW-005	C s5 =	17.0000 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	17.0000 (mg/L)
	concentration of surface water into Colby Lake	C scl =	17.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	17.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	24.5000 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	14.7900 (mg/L)
	concentration of ground water into SW-002	C g2 =	14.7900 (mg/L)
	concentration of ground water into SW-003	C g3 =	14.7900 (mg/L)
	concentration of ground water into SW-004	C g4 =	14.7900 (mg/L)
	concentration of ground water into SW-004A	C g4A =	14.7900 (mg/L)
	concentration of ground water into SW-005	C g5 =	14.7900 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	14.7900 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	14.7900 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	152.4960 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	540.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	540.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	540.0000 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	17.7205 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	9.3700 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	15.8000 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	152.4960 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	540.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	540.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	540.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	17.7205 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	9.3700 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	9.3700 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	14.7900 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	14.7900 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	14.7900 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	76.3956 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	(mg/s)
	mass flux of ground water into SW-001	M g1 =	75.34026 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	693.35000 (mg/s)
	mass flux of surface water into SW-002	M s2 =	(mg/s)
	mass flux of ground water into SW-002	M g2 =	150.41258 (mg/s)
	mass flux of surface water into SW-003	M s3 =	(mg/s)
	mass flux of ground water into SW-003	M g3 =	45.15051 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.02949 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.01160 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00044 (mg/s)
	mass flux of surface water into SW-004	M s4 =	(mg/s)
	mass flux of ground water into SW-004	M g4 =	135.14150 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.01160 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00301 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00233 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	20.27794 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00042 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00038 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00002 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	5.01400 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00563 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.01206 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.16358 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M g4A =	582.45226 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00334 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	8.86848 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	9.42024 (mg/s)
	mass flux of surface water into SW-005	M s5 =	- (mg/s)
	mass flux of ground water into SW-005	M g5 =	950.12439 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	196.72179 (mg/s)
mass flux of surface water into Colby Lake	M scl =	- (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	489.71169 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	187.62900 (mg/s)	
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M r1 =	768.6903 (mg/s)
	mass flux in river at SW-002	M r2 =	919.1028 (mg/s)
	mass flux in river at SW-003	M r3 =	964.2949 (mg/s)
	mass flux in river at SW-004	M r4 =	1,124.9278 (mg/s)
	mass flux in river at SW-004A	M r4A =	1,725.6721 (mg/s)
	mass flux in river at SW-005	M r5 =	2,675.7965 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M r6 =	2,872.5183 (mg/s)
	mass flux into Colby Lake	M cl =	3,549.8590 (mg/s)
	Low Flow		
	concentration in river at SW-001	C r1 =	23.01881 (mg/L)
	concentration in river at SW-002	C r2 =	21.09782 (mg/L)
	concentration in river at SW-003	C r3 =	20.68560 (mg/L)
	concentration in river at SW-004	C r4 =	19.24373 (mg/L)
	concentration in river at SW-004A	C r4A =	17.36001 (mg/L)
	concentration in river at SW-005	C r5 =	16.35113 (mg/L)
	concentration in river at USGS Gage	C r6 =	16.23378 (mg/L)
	concentration in Colby Lake (H)	C cl =	16.86154 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case	Year 1		
Parameter	Cadmium		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0001 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0001 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0001 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0001 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0001 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0001 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0001 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0001 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0001 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0001 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0001 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0001 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0001 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0001 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0001 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0001 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0001 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0001 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0002 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0002 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.0149 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0001 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.0001 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.0002 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0002 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0149 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0001 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	0.0001 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0001 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0001 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0001 (mg/L)
	concentration of liner leakage from WWTF pond	C gWTFp =	0.0021 (mg/L)
	Convert concentration to mass flux	Low Flow	
mass flux of surface water into SW-001		M s1 =	- (mg/s)
mass flux of ground water into SW-001		M g1 =	0.00051 (mg/s)
mass flux of surface discharges from upstream of PM-1		M sns =	0.00283 (mg/s)
mass flux of surface water into SW-002		M s2 =	- (mg/s)
mass flux of ground water into SW-002		M g2 =	0.00102 (mg/s)
mass flux of surface water into SW-003		M s3 =	- (mg/s)
mass flux of ground water into SW-003		M g3 =	0.00031 (mg/s)
mass flux of seepage from East Pit to SW-003		M gep_003 =	#N/A (mg/s)
mass flux of liner leakage from Cat 2/3 stockpile to SW-003		M gC3_003 =	0.00000 (mg/s)
mass flux of liner leakage from Cat 3LO stockpile to SW-003		M gC3LO_003 =	0.00000 (mg/s)
mass flux of liner leakage from Cat 2/3 sumps to SW-003		M gC3s_003 =	0.00000 (mg/s)
mass flux of surface water into SW-004		M s4 =	- (mg/s)
mass flux of ground water into SW-004		M g4 =	0.00091 (mg/s)
mass flux of seepage from East Pit to SW-004		M gep_004 =	#N/A (mg/s)
mass flux of seepage from West Pit		M gwp =	#N/A (mg/s)
mass flux of liner leakage from Cat 2/3 stockpile to SW-004		M gC3_004 =	- (mg/s)
mass flux of liner leakage from Cat 3LO stockpile to SW-004		M gC3LO_004 =	0.00000 (mg/s)
mass flux of liner leakage from Cat 4 stockpile		M gC4 =	0.00000 (mg/s)
mass flux of liner leakage from LOSP		M gC4LO =	0.00000 (mg/s)
mass flux of seepage from Overburden (Storage)		M gOS =	0.00013 (mg/s)
mass flux of liner leakage from Cat 3LO sumps to SW-004		M gC3LOs_004 =	0.00000 (mg/s)
mass flux of liner leakage from Cat 4 sumps		M gC4s =	0.00000 (mg/s)
mass flux of liner leakage from LOSP sumps		M gC4LOs =	0.00000 (mg/s)
mass flux of seepage from Overburden Ponds - PW1		M gOp1 =	0.00003 (mg/s)
mass flux of leakage from Haul Road Pond - PW2		M gHRp2 =	0.00000 (mg/s)
mass flux of leakage from Haul Road Pond - PW4		M gHRp4 =	0.00000 (mg/s)
mass flux of leakage from RTH Pond - PW3		M gRTHp =	0.00000 (mg/s)
mass flux of liner leakage from WWTF pond		M gWTFp =	0.00000 (mg/s)
mass flux of surface water into SW-004A		M s4A =	- (mg/s)
mass flux of ground water into SW-004A		M g4A =	0.00394 (mg/s)
mass flux of West Pit overflow		M sms =	#N/A (mg/s)
mass flux of liner leakage from Cat 1 stockpile		M gC12 =	- (mg/s)
mass flux of liner leakage from Cat 1 sumps		M gC12s =	0.00000 (mg/s)
mass flux of seepage from Overburden (Cat 1)		M gO12 =	- (mg/s)
mass flux of seepage from Overburden Pond - PW7		M gOp7 =	0.00006 (mg/s)
mass flux of surface water into SW-005		M s5 =	- (mg/s)
mass flux of ground water into SW-005		M g5 =	0.00642 (mg/s)
mass flux of surface water into USGS Gage		M s6 =	- (mg/s)
mass flux of ground water into USGS Gage		M g6 =	0.00133 (mg/s)
mass flux of surface water into Colby Lake	M scl =	- (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	0.00331 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.00110 (mg/s)	
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M r1 =	0.0033 (mg/s)
	mass flux in river at SW-002	M r2 =	0.0044 (mg/s)
	mass flux in river at SW-003	M r3 =	0.0047 (mg/s)
	mass flux in river at SW-004	M r4 =	0.0057 (mg/s)
	mass flux in river at SW-004A	M r4A =	0.0097 (mg/s)
	mass flux in river at SW-005	M r5 =	0.0162 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M r6 =	0.0175 (mg/s)
	mass flux into Colby Lake	M cl =	0.0219 (mg/s)
	Low Flow		
	concentration in river at SW-001	C r1 =	0.00010 (mg/L)
	concentration in river at SW-002	C r2 =	0.00010 (mg/L)
	concentration in river at SW-003	C r3 =	0.00010 (mg/L)
	concentration in river at SW-004	C r4 =	0.00010 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00010 (mg/L)
	concentration in river at SW-005	C r5 =	0.00010 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00010 (mg/L)
	concentration in Colby Lake (H)	C cl =	0.00010 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 1 Chloride		
Input concentration data	concentration of surface water into SW-001	C s1 =	8.0000 (mg/L)
	concentration of surface water into SW-002	C s2 =	8.0000 (mg/L)
	concentration of surface water into SW-003	C s3 =	8.0000 (mg/L)
	concentration of surface water into SW-004	C s4 =	8.0000 (mg/L)
	concentration of surface water into SW-004A	C s4A =	8.0000 (mg/L)
	concentration of surface water into SW-005	C s5 =	8.0000 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	8.0000 (mg/L)
	concentration of surface water into Colby Lake	C scl =	8.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	8.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	1.6000 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	6.6000 (mg/L)
	concentration of ground water into SW-002	C g2 =	6.6000 (mg/L)
	concentration of ground water into SW-003	C g3 =	6.6000 (mg/L)
	concentration of ground water into SW-004	C g4 =	6.6000 (mg/L)
	concentration of ground water into SW-004A	C g4A =	6.6000 (mg/L)
	concentration of ground water into SW-005	C g5 =	6.6000 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	6.6000 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	6.6000 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	29.2127 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	45.9407 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	61.5854 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	19.9129 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.9767 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	5.3500 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	2.3300 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	29.2127 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	45.9407 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	61.5854 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	19.9129 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.9767 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	5.3500 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	5.3500 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	6.6000 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	6.6000 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	6.6000 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	10.7760 (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M s1 =	(mg/s)
	mass flux of ground water into SW-001	M g1 =	33.62040 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	45.28000 (mg/s)
	mass flux of surface water into SW-002	M s2 =	(mg/s)
	mass flux of ground water into SW-002	M g2 =	67.12123 (mg/s)
	mass flux of surface water into SW-003	M s3 =	(mg/s)
	mass flux of ground water into SW-003	M g3 =	20.14830 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep 003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3 003 =	0.00251 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO 003 =	0.00132 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s 003 =	0.00004 (mg/s)
	mass flux of surface water into SW-004	M s4 =	(mg/s)
	mass flux of ground water into SW-004	M g4 =	60.30655 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep 004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3 004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO 004 =	0.00132 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00011 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00013 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	11.57812 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs 004 =	0.00005 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00001 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	2.86285 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00251 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00538 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.02307 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M g4A =	259.91785 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00064 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	1.30782 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	5.37868 (mg/s)
	mass flux of surface water into SW-005	M s5 =	- (mg/s)
	mass flux of ground water into SW-005	M g5 =	423.99060 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	- (mg/s)
mass flux of ground water into USGS Gage	M g6 =	87.78660 (mg/s)	
mass flux of surface water into Colby Lake	M scl =	- (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	218.53260 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	88.29600 (mg/s)	
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M r1 =	78.9004 (mg/s)
	mass flux in river at SW-002	M r2 =	146.0216 (mg/s)
	mass flux in river at SW-003	M r3 =	166.1738 (mg/s)
	mass flux in river at SW-004	M r4 =	240.9539 (mg/s)
	mass flux in river at SW-004A	M r4A =	507.5589 (mg/s)
	mass flux in river at SW-005	M r5 =	931.5495 (mg/s)
	mass flux in river at USGS Gage	M r6 =	1,019.3361 (mg/s)
mass flux into Colby Lake	M cl =	1,326.1647 (mg/s)	
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C r1 =	2.36271 (mg/L)
	concentration in river at SW-002	C r2 =	3.35190 (mg/L)
	concentration in river at SW-003	C r3 =	3.56468 (mg/L)
	concentration in river at SW-004	C r4 =	4.12191 (mg/L)
	concentration in river at SW-004A	C r4A =	5.10597 (mg/L)
	concentration in river at SW-005	C r5 =	5.69247 (mg/L)
	concentration in river at USGS Gage	C r6 =	5.76069 (mg/L)
	concentration in Colby Lake (H	C cl =	7.70637 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 1 Cobalt		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0005 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0005 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0005 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0005 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0005 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0005 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0005 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0005 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0005 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0005 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0017 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0017 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0017 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0017 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0017 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0017 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0017 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0017 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.0045 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.0520 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0520 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0520 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.2139 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0011 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.0013 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.0045 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.0520 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.0520 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0520 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.2139 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0011 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	0.0011 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0017 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0017 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0017 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	0.0383 (mg/L)
		Low Flow	
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	(mg/s)
	mass flux of ground water into SW-001	M g1 =	0.00841 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.01415 (mg/s)
	mass flux of surface water into SW-002	M s2 =	(mg/s)
	mass flux of ground water into SW-002	M g2 =	0.01678 (mg/s)
	mass flux of surface water into SW-003	M s3 =	(mg/s)
	mass flux of ground water into SW-003	M g3 =	0.00504 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	(mg/s)
	mass flux of ground water into SW-004	M g4 =	0.01508 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00003 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.00240 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.00059 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00008 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.06498 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	0.00073 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	0.00112 (mg/s)
	mass flux of surface water into SW-005	M s5 =	- (mg/s)
	mass flux of ground water into SW-005	M g5 =	0.10600 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.02195 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	0.05463 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.00552 (mg/s)
		Low Flow	
Mass balance at each node	mass flux in river at SW-001	M r1 =	0.0226 (mg/s)
	mass flux in river at SW-002	M r2 =	0.0393 (mg/s)
	mass flux in river at SW-003	M r3 =	0.0444 (mg/s)
	mass flux in river at SW-004	M r4 =	0.0626 (mg/s)
	mass flux in river at SW-004A	M r4A =	0.1294 (mg/s)
	mass flux in river at SW-005	M r5 =	0.2354 (mg/s)
	mass flux in river at USGS Gage	M r6 =	0.2573 (mg/s)
	mass flux into Colby Lake	M cl =	0.3175 (mg/s)
Convert mass flux to concentration	concentration in river at SW-001	C r1 =	0.00068 (mg/L)
	concentration in river at SW-002	C r2 =	0.00090 (mg/L)
	concentration in river at SW-003	C r3 =	0.00095 (mg/L)
	concentration in river at SW-004	C r4 =	0.00107 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00130 (mg/L)
	concentration in river at SW-005	C r5 =	0.00144 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00145 (mg/L)
	concentration in Colby Lake (H	C cl =	0.00064 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 1 Copper		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0017 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0017 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0017 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0017 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0017 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0017 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0017 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0017 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0190 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0012 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0030 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0030 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0030 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0030 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0030 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0030 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0030 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0030 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0733 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0920 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0920 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0920 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0515 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0214 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.0170 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0733 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0920 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0920 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0920 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0515 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0214 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	0.0214 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0030 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0030 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0030 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0391 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.01503 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.03509 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.03000 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00901 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.02696 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.04840 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.01147 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00008 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.11618 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.00954 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	0.02155 (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.18951 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.03924 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.09768 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.20970 (mg/s)
Mass balance at each node			Low Flow
	mass flux in river at SW-001	M_r1 =	0.0501 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.0801 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.0891 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.1741 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.3213 (mg/s)
	mass flux in river at SW-005	M_r5 =	0.5108 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	0.5501 (mg/s)
	mass flux into Colby Lake	M_cl =	0.8575 (mg/s)
			Low Flow
Convert mass flux to concentration	concentration in river at SW-001	C_r1 =	0.00150 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00184 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00191 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00298 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00323 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00312 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00311 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.00202 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 1 Fluoride		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0700 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0700 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0700 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0700 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0700 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0700 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0700 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0700 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0700 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.1400 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.2800 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.2800 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.2800 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.2800 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.2800 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.2800 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.2800 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.2800 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.0628 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.0621 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0621 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0621 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.0630 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.2239 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.4200 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.0628 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.0621 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.0621 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0621 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0630 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.2239 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	0.2239 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.2800 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.2800 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.2800 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	0.1775 (mg/L)
Convert concentration to mass flux			Low Flow
	mass flux of surface water into SW-001	M s1 =	(mg/s)
	mass flux of ground water into SW-001	M g1 =	1.42632 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	3.96200 (mg/s)
	mass flux of surface water into SW-002	M s2 =	(mg/s)
	mass flux of ground water into SW-002	M g2 =	2.84757 (mg/s)
	mass flux of surface water into SW-003	M s3 =	(mg/s)
	mass flux of ground water into SW-003	M g3 =	0.85478 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	(mg/s)
	mass flux of ground water into SW-004	M g4 =	2.55846 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.48453 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.11981 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00011 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00023 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00038 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M g4A =	11.02682 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	0.23574 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	0.22509 (mg/s)
	mass flux of surface water into SW-005	M s5 =	- (mg/s)
	mass flux of ground water into SW-005	M g5 =	17.98748 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	3.72428 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	9.27108 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.77259 (mg/s)
Mass balance at each node			Low Flow
	mass flux in river at SW-001	M r1 =	5.3883 (mg/s)
	mass flux in river at SW-002	M r2 =	8.2359 (mg/s)
	mass flux in river at SW-003	M r3 =	9.0907 (mg/s)
	mass flux in river at SW-004	M r4 =	12.2542 (mg/s)
	mass flux in river at SW-004A	M r4A =	23.7418 (mg/s)
	mass flux in river at SW-005	M r5 =	41.7293 (mg/s)
	mass flux in river at USGS Gage	M r6 =	45.4536 (mg/s)
mass flux into Colby Lake	M cl =	55.4973 (mg/s)	
Convert mass flux to concentration			Low Flow
	concentration in river at SW-001	C r1 =	0.16136 (mg/L)
	concentration in river at SW-002	C r2 =	0.18905 (mg/L)
	concentration in river at SW-003	C r3 =	0.19501 (mg/L)
	concentration in river at SW-004	C r4 =	0.20963 (mg/L)
	concentration in river at SW-004A	C r4A =	0.23884 (mg/L)
	concentration in river at SW-005	C r5 =	0.25500 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.25688 (mg/L)
	concentration in Colby Lake (H	C cl =	0.09655 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 1 Iron		
Input concentration data	concentration of surface water into SW-001	C s1 =	1.6000 (mg/L)
	concentration of surface water into SW-002	C s2 =	1.6000 (mg/L)
	concentration of surface water into SW-003	C s3 =	1.6000 (mg/L)
	concentration of surface water into SW-004	C s4 =	1.6000 (mg/L)
	concentration of surface water into SW-004A	C s4A =	1.6000 (mg/L)
	concentration of surface water into SW-005	C s5 =	1.6000 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	1.6000 (mg/L)
	concentration of surface water into Colby Lake	C scl =	1.6000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	1.6000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0300 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	2.8440 (mg/L)
	concentration of ground water into SW-002	C g2 =	2.8440 (mg/L)
	concentration of ground water into SW-003	C g3 =	2.8440 (mg/L)
	concentration of ground water into SW-004	C g4 =	2.8440 (mg/L)
	concentration of ground water into SW-004A	C g4A =	2.8440 (mg/L)
	concentration of ground water into SW-005	C g5 =	2.8440 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	2.8440 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	2.8440 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.5742 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.8100 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.8100 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.8100 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	62.0810 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.2255 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.1500 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.5742 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.8100 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.8100 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.8100 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	62.0810 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.2255 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	0.2255 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	2.8440 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	2.8440 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	2.8440 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	8.5792 (mg/L)
			Low Flow
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	(mg/s)
	mass flux of ground water into SW-001	M g1 =	14.48734 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.84900 (mg/s)
	mass flux of surface water into SW-002	M s2 =	(mg/s)
	mass flux of ground water into SW-002	M g2 =	28.92315 (mg/s)
	mass flux of surface water into SW-003	M s3 =	(mg/s)
	mass flux of ground water into SW-003	M g3 =	8.68209 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.00004 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00002 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	(mg/s)
	mass flux of ground water into SW-004	M g4 =	25.98664 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00002 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00817 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.48801 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00008 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.12067 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00108 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00232 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.01837 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M g4A =	112.00096 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	0.08419 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	0.22671 (mg/s)
	mass flux of surface water into SW-005	M s5 =	- (mg/s)
	mass flux of ground water into SW-005	M g5 =	182.70140 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	37.82804 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	94.16768 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl =	17.65920 (mg/s)
			Low Flow
Mass balance at each node	mass flux in river at SW-001	M r1 =	15.3363 (mg/s)
	mass flux in river at SW-002	M r2 =	44.2595 (mg/s)
	mass flux in river at SW-003	M r3 =	52.9416 (mg/s)
	mass flux in river at SW-004	M r4 =	79.5670 (mg/s)
	mass flux in river at SW-004A	M r4A =	191.8789 (mg/s)
	mass flux in river at SW-005	M r5 =	374.5803 (mg/s)
	mass flux in river at USGS Gage	M r6 =	412.4083 (mg/s)
	mass flux into Colby Lake	M cl =	524.2352 (mg/s)
			Low Flow
Convert mass flux to concentration	concentration in river at SW-001	C r1 =	0.45925 (mg/L)
	concentration in river at SW-002	C r2 =	1.01597 (mg/L)
	concentration in river at SW-003	C r3 =	1.13568 (mg/L)
	concentration in river at SW-004	C r4 =	1.36112 (mg/L)
	concentration in river at SW-004A	C r4A =	1.93027 (mg/L)
	concentration in river at SW-005	C r5 =	2.28897 (mg/L)
	concentration in river at USGS Gage	C r6 =	2.33069 (mg/L)
	concentration in Colby Lake (H)	C cl =	1.71302 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case	Year 1		
Parameter	Hardness		
Input concentration data	concentration of surface water into SW-001	C_s1 =	110.0000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	110.0000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	110.0000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	110.0000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	110.0000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	110.0000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	110.0000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	110.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	110.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	110.0000 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	66.4200 (mg/L)
	concentration of ground water into SW-002	C_g2 =	66.4200 (mg/L)
	concentration of ground water into SW-003	C_g3 =	66.4200 (mg/L)
	concentration of ground water into SW-004	C_g4 =	66.4200 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	66.4200 (mg/L)
	concentration of ground water into SW-005	C_g5 =	66.4200 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	66.4200 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	66.4200 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	497.0833 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	1,729.3495 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	1,729.3495 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	1,729.3495 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	153.8991 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	43.5200 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	71.5000 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	497.0833 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	1,729.3495 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	1,729.3495 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	1,729.3495 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	153.8991 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	43.5200 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	43.5200 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	66.4200 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	66.4200 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	66.4200 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	268.9289 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	338.34348 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	3,113.00000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	675.48367 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	202.76516 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.09443 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.03714 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00139 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	606.90322 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.03714 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00964 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.02025 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	94.18314 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00133 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00121 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00021 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	23.28806 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.02527 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.05414 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00002 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.57584 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	2,615.71869 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.01089 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	40.13266 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	43.75333 (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	4,266.88722 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	883.45242 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	2,199.23262 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	1,214.07000 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	3,451.3435 (mg/s)
	mass flux in river at SW-002	M_r2 =	4,126.8271 (mg/s)
	mass flux in river at SW-003	M_r3 =	4,329.7253 (mg/s)
	mass flux in river at SW-004	M_r4 =	5,054.8261 (mg/s)
	mass flux in river at SW-004A	M_r4A =	7,754.4417 (mg/s)
	mass flux in river at SW-005	M_r5 =	12,021.3289 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	12,904.7814 (mg/s)
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C_r1 =	103.35220 (mg/L)
	concentration in river at SW-002	C_r2 =	94.73047 (mg/L)
	concentration in river at SW-003	C_r3 =	92.87921 (mg/L)
	concentration in river at SW-004	C_r4 =	86.47109 (mg/L)
	concentration in river at SW-004A	C_r4A =	78.00856 (mg/L)
	concentration in river at SW-005	C_r5 =	73.45935 (mg/L)
	concentration in river at USGS Gage	C_r6 =	72.93020 (mg/L)
	concentration in Colby Lake (H)	C_cl =	104.69259 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 1 Potassium		
Input concentration data	concentration of surface water into SW-001	C s1 =	1.3000 (mg/L)
	concentration of surface water into SW-002	C s2 =	1.3000 (mg/L)
	concentration of surface water into SW-003	C s3 =	1.3000 (mg/L)
	concentration of surface water into SW-004	C s4 =	1.3000 (mg/L)
	concentration of surface water into SW-004A	C s4A =	1.3000 (mg/L)
	concentration of surface water into SW-005	C s5 =	1.3000 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	1.3000 (mg/L)
	concentration of surface water into Colby Lake	C scl =	1.3000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	1.3000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	2.7000 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	1.7500 (mg/L)
	concentration of ground water into SW-002	C g2 =	1.7500 (mg/L)
	concentration of ground water into SW-003	C g3 =	1.7500 (mg/L)
	concentration of ground water into SW-004	C g4 =	1.7500 (mg/L)
	concentration of ground water into SW-004A	C g4A =	1.7500 (mg/L)
	concentration of ground water into SW-005	C g5 =	1.7500 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	1.7500 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	1.7500 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	32.7851 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	49.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	49.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	49.0000 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	8.1541 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	2.2600 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	4.4500 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	32.7851 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	49.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	49.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	49.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	8.1541 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	2.2600 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	2.2600 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	1.7500 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	1.7500 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	1.7500 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	12.8932 (mg/L)
Low Flow			
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	(mg/s)
	mass flux of ground water into SW-001	M g1 =	8.91450 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	76.41000 (mg/s)
	mass flux of surface water into SW-002	M s2 =	(mg/s)
	mass flux of ground water into SW-002	M g2 =	17.79730 (mg/s)
	mass flux of surface water into SW-003	M s3 =	(mg/s)
	mass flux of ground water into SW-003	M g3 =	5.34235 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.00268 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00105 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00004 (mg/s)
	mass flux of surface water into SW-004	M s4 =	(mg/s)
	mass flux of ground water into SW-004	M g4 =	15.99037 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00105 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00027 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00107 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	4.89094 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00004 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00003 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00001 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	1.20935 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00067 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00143 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.02761 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M g4A =	68.91761 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00072 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	2.49777 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	2.27212 (mg/s)
	mass flux of surface water into SW-005	M s5 =	- (mg/s)
	mass flux of ground water into SW-005	M g5 =	112.42175 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	23.27675 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	57.94425 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl =	14.34810 (mg/s)
Low Flow			
Mass balance at each node	mass flux in river at SW-001	M r1 =	85.3245 (mg/s)
	mass flux in river at SW-002	M r2 =	103.1218 (mg/s)
	mass flux in river at SW-003	M r3 =	108.4679 (mg/s)
	mass flux in river at SW-004	M r4 =	130.5908 (mg/s)
	mass flux in river at SW-004A	M r4A =	204.2790 (mg/s)
	mass flux in river at SW-005	M r5 =	316.7008 (mg/s)
	mass flux in river at USGS Gage	M r6 =	339.9775 (mg/s)
	mass flux into Colby Lake	M cl =	412.2699 (mg/s)
Low Flow			
Convert mass flux to concentration	concentration in river at SW-001	C r1 =	2.55508 (mg/L)
	concentration in river at SW-002	C r2 =	2.36714 (mg/L)
	concentration in river at SW-003	C r3 =	2.32680 (mg/L)
	concentration in river at SW-004	C r4 =	2.23397 (mg/L)
	concentration in river at SW-004A	C r4A =	2.05502 (mg/L)
	concentration in river at SW-005	C r5 =	1.93528 (mg/L)
	concentration in river at USGS Gage	C r6 =	1.92135 (mg/L)
	concentration in Colby Lake (H)	C cl =	1.38286 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case		Year 1	
Parameter		Magnesium	
Input concentration data	concentration of surface water into SW-001	C_s1 =	8.0000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	8.0000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	8.0000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	8.0000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	8.0000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	8.0000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	8.0000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	8.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	8.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	10.5000 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	8.0200 (mg/L)
	concentration of ground water into SW-002	C_g2 =	8.0200 (mg/L)
	concentration of ground water into SW-003	C_g3 =	8.0200 (mg/L)
	concentration of ground water into SW-004	C_g4 =	8.0200 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	8.0200 (mg/L)
	concentration of ground water into SW-005	C_g5 =	8.0200 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	8.0200 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	8.0200 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	28.3810 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	93.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	93.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	93.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	26.6591 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	4.8800 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	9.0100 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	28.3810 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	93.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	93.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	93.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	26.6591 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	4.8800 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	4.8800 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	8.0200 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	8.0200 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	8.0200 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	19.0551 (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	40.85388 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	297.15000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	81.56247 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	24.48324 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00508 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00200 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00007 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	73.28160 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00200 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00052 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00351 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	10.56098 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00007 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00007 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00004 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	2.61135 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00305 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00654 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.04080 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	315.83956 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00062 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	5.05728 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	4.90616 (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	515.21282 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	106.67402 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	265.55022 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	88.29600 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	338.0039 (mg/s)
	mass flux in river at SW-002	M_r2 =	419.5663 (mg/s)
	mass flux in river at SW-003	M_r3 =	444.0567 (mg/s)
	mass flux in river at SW-004	M_r4 =	530.5673 (mg/s)
	mass flux in river at SW-004A	M_r4A =	856.3709 (mg/s)
	mass flux in river at SW-005	M_r5 =	1,371.5838 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	1,478.2578 (mg/s)
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C_r1 =	10.12169 (mg/L)
	concentration in river at SW-002	C_r2 =	9.63106 (mg/L)
	concentration in river at SW-003	C_r3 =	9.52569 (mg/L)
	concentration in river at SW-004	C_r4 =	9.07622 (mg/L)
	concentration in river at SW-004A	C_r4A =	8.61497 (mg/L)
	concentration in river at SW-005	C_r5 =	8.38141 (mg/L)
	concentration in river at USGS Gage	C_r6 =	8.35424 (mg/L)
	concentration in Colby Lake (H)	C_cl =	8.04203 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 1 Manganese		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.1500 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.1500 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.1500 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.1500 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.1500 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.1500 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.1500 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.1500 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.1500 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0086 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.1240 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.1240 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.1240 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.1240 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.1240 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.1240 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.1240 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.1240 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.0672 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.7500 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.7500 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.7500 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.5475 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.1604 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.1160 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.0672 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.7500 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.7500 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.7500 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4Os =	0.5475 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.1604 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	0.1604 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.1240 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.1240 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.1240 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	0.1656 (mg/L)
		Low Flow	
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	(mg/s)
	mass flux of ground water into SW-001	M g1 =	0.63166 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.24338 (mg/s)
	mass flux of surface water into SW-002	M s2 =	(mg/s)
	mass flux of ground water into SW-002	M g2 =	1.26107 (mg/s)
	mass flux of surface water into SW-003	M s3 =	(mg/s)
	mass flux of ground water into SW-003	M g3 =	0.37854 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep 003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3 003 =	0.00004 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO 003 =	0.00002 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s 003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	(mg/s)
	mass flux of ground water into SW-004	M g4 =	1.13303 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep 004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3 004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO 004 =	0.00002 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00007 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.34711 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs 004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4Os =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.08583 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00005 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00010 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00035 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M g4A =	4.88330 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	0.06511 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	0.16125 (mg/s)
	mass flux of surface water into SW-005	M s5 =	- (mg/s)
	mass flux of ground water into SW-005	M g5 =	7.96588 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	1.64932 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	4.10576 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl =	1.65555 (mg/s)
		Low Flow	
Mass balance at each node	mass flux in river at SW-001	M r1 =	0.8750 (mg/s)
	mass flux in river at SW-002	M r2 =	2.1361 (mg/s)
	mass flux in river at SW-003	M r3 =	2.5147 (mg/s)
	mass flux in river at SW-004	M r4 =	4.0813 (mg/s)
	mass flux in river at SW-004A	M r4A =	9.1909 (mg/s)
	mass flux in river at SW-005	M r5 =	17.1568 (mg/s)
	mass flux in river at USGS Gage	M r6 =	18.8061 (mg/s)
mass flux into Colby Lake	M cl =	24.5675 (mg/s)	
		Low Flow	
Convert mass flux to concentration	concentration in river at SW-001	C r1 =	0.02620 (mg/L)
	concentration in river at SW-002	C r2 =	0.04903 (mg/L)
	concentration in river at SW-003	C r3 =	0.05394 (mg/L)
	concentration in river at SW-004	C r4 =	0.06982 (mg/L)
	concentration in river at SW-004A	C r4A =	0.09246 (mg/L)
	concentration in river at SW-005	C r5 =	0.10484 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.10628 (mg/L)
	concentration in Colby Lake (H)	C cl =	0.14430 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case	Year 1		
Parameter	Sodium		
Input concentration data	concentration of surface water into SW-001	C s1 =	2.5000 (mg/L)
	concentration of surface water into SW-002	C s2 =	2.5000 (mg/L)
	concentration of surface water into SW-003	C s3 =	2.5000 (mg/L)
	concentration of surface water into SW-004	C s4 =	2.5000 (mg/L)
	concentration of surface water into SW-004A	C s4A =	2.5000 (mg/L)
	concentration of surface water into SW-005	C s5 =	2.5000 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	2.5000 (mg/L)
	concentration of surface water into Colby Lake	C scl =	2.5000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	2.5000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	4.8000 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	13.3300 (mg/L)
	concentration of ground water into SW-002	C g2 =	13.3300 (mg/L)
	concentration of ground water into SW-003	C g3 =	13.3300 (mg/L)
	concentration of ground water into SW-004	C g4 =	13.3300 (mg/L)
	concentration of ground water into SW-004A	C g4A =	13.3300 (mg/L)
	concentration of ground water into SW-005	C g5 =	13.3300 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	13.3300 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	13.3300 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	45.9036 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	370.0178 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	496.0245 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	201.1695 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	3.3451 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	4.6000 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	7.1900 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	45.9036 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	370.0178 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	496.0245 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	201.1695 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	3.3451 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	4.6000 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	4.6000 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	13.3300 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	13.3300 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	13.3300 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	34.9869 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	(mg/s)
	mass flux of ground water into SW-001	M g1 =	67.90302 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	135.84000 (mg/s)
	mass flux of surface water into SW-002	M s2 =	(mg/s)
	mass flux of ground water into SW-002	M g2 =	135.56455 (mg/s)
	mass flux of surface water into SW-003	M s3 =	(mg/s)
	mass flux of ground water into SW-003	M g3 =	40.69346 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep 003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3 003 =	0.02021 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO 003 =	0.01065 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s 003 =	0.00030 (mg/s)
	mass flux of surface water into SW-004	M s4 =	(mg/s)
	mass flux of ground water into SW-004	M g4 =	121.80096 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep 004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3 004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO 004 =	0.01065 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00112 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00044 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	9.95502 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs 004 =	0.00038 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00014 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	2.46151 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00507 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.01087 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.07492 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M g4A =	524.95529 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00101 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	4.03572 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	4.62466 (mg/s)
	mass flux of surface water into SW-005	M s5 =	- (mg/s)
	mass flux of ground water into SW-005	M g5 =	856.33253 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	177.30233 (mg/s)
mass flux of surface water into Colby Lake	M scl =	- (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	441.36963 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	27.59250 (mg/s)	
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M r1 =	203.7430 (mg/s)
	mass flux in river at SW-002	M r2 =	339.3076 (mg/s)
	mass flux in river at SW-003	M r3 =	380.0322 (mg/s)
	mass flux in river at SW-004	M r4 =	514.3536 (mg/s)
	mass flux in river at SW-004A	M r4A =	1,047.9703 (mg/s)
	mass flux in river at SW-005	M r5 =	1,904.3028 (mg/s)
	mass flux in river at USGS Gage	M r6 =	2,081.6051 (mg/s)
mass flux into Colby Lake	M cl =	2,550.5672 (mg/s)	
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C r1 =	6.10119 (mg/L)
	concentration in river at SW-002	C r2 =	7.78874 (mg/L)
	concentration in river at SW-003	C r3 =	8.15227 (mg/L)
	concentration in river at SW-004	C r4 =	8.79886 (mg/L)
	concentration in river at SW-004A	C r4A =	10.54243 (mg/L)
	concentration in river at SW-005	C r5 =	11.63672 (mg/L)
	concentration in river at USGS Gage	C r6 =	11.76400 (mg/L)
	concentration in Colby Lake (H)	C cl =	3.82490 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 1 Nickel			
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0016 (mg/L)	
	concentration of surface water into SW-002	C s2 =	0.0016 (mg/L)	
	concentration of surface water into SW-003	C s3 =	0.0016 (mg/L)	
	concentration of surface water into SW-004	C s4 =	0.0016 (mg/L)	
	concentration of surface water into SW-004A	C s4A =	0.0016 (mg/L)	
	concentration of surface water into SW-005	C s5 =	0.0016 (mg/L)	
	concentration of surface water into USGS Gage	C s6 =	0.0016 (mg/L)	
	concentration of surface water into Colby Lake	C scl =	0.0016 (mg/L)	
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0033 (mg/L)	
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0016 (mg/L)	
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)	
	concentration of ground water into SW-001	C g1 =	0.0163 (mg/L)	
	concentration of ground water into SW-002	C g2 =	0.0163 (mg/L)	
	concentration of ground water into SW-003	C g3 =	0.0163 (mg/L)	
	concentration of ground water into SW-004	C g4 =	0.0163 (mg/L)	
	concentration of ground water into SW-004A	C g4A =	0.0163 (mg/L)	
	concentration of ground water into SW-005	C g5 =	0.0163 (mg/L)	
	concentration of ground water into USGS Gage	C g6 =	0.0163 (mg/L)	
	concentration of ground water into Colby Lake	C gcl =	0.0163 (mg/L)	
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)	
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)	
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.0290 (mg/L)	
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.8600 (mg/L)	
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.8600 (mg/L)	
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.8600 (mg/L)	
	concentration of liner leakage from LOSP	C gC4LO =	2.7714 (mg/L)	
	concentration of seepage from Overburden (Storage)	C gOS =	0.0080 (mg/L)	
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.0190 (mg/L)	
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.0290 (mg/L)	
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.8600 (mg/L)	
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.8600 (mg/L)	
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.8600 (mg/L)	
	concentration of liner leakage from LOSP sumps	C gC4LOs =	2.7714 (mg/L)	
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0080 (mg/L)	
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	0.0080 (mg/L)	
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0163 (mg/L)	
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0163 (mg/L)	
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0163 (mg/L)	
	concentration of liner leakage from WWTF ponc	C_gWTFp =	0.5201 (mg/L)	
				Low Flow
	Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	(mg/s)
		mass flux of ground water into SW-001	M g1 =	0.08293 (mg/s)
mass flux of surface discharges from upstream of PM-1		M sns =	0.04387 (mg/s)	
mass flux of surface water into SW-002		M s2 =	(mg/s)	
mass flux of ground water into SW-002		M g2 =	0.16557 (mg/s)	
mass flux of surface water into SW-003		M s3 =	(mg/s)	
mass flux of ground water into SW-003		M g3 =	0.04970 (mg/s)	
mass flux of seepage from East Pit to SW-003		M gep_003 =	#N/A (mg/s)	
mass flux of liner leakage from Cat 2/3 stockpile to SW-003		M gC3_003 =	0.00005 (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-003		M gC3LO_003 =	0.00002 (mg/s)	
mass flux of liner leakage from Cat 2/3 sumps to SW-003		M gC3s_003 =	0.00000 (mg/s)	
mass flux of surface water into SW-004		M s4 =	(mg/s)	
mass flux of ground water into SW-004		M g4 =	0.14876 (mg/s)	
mass flux of seepage from East Pit to SW-004		M gep_004 =	#N/A (mg/s)	
mass flux of seepage from West Pit		M gwp =	#N/A (mg/s)	
mass flux of liner leakage from Cat 2/3 stockpile to SW-004		M gC3_004 =	- (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-004		M gC3LO_004 =	0.00002 (mg/s)	
mass flux of liner leakage from Cat 4 stockpile		M gC4 =	0.00000 (mg/s)	
mass flux of liner leakage from LOSP		M gC4LO =	0.00036 (mg/s)	
mass flux of seepage from Overburden (Storage)		M gOS =	0.01725 (mg/s)	
mass flux of liner leakage from Cat 3LO sumps to SW-004		M gC3LOs_004 =	0.00000 (mg/s)	
mass flux of liner leakage from Cat 4 sumps		M gC4s =	0.00000 (mg/s)	
mass flux of liner leakage from LOSP sumps		M gC4LOs =	0.00000 (mg/s)	
mass flux of seepage from Overburden Ponds - PW1		M gOp1 =	0.00426 (mg/s)	
mass flux of leakage from Haul Road Pond - PW2		M gHRp2 =	0.00001 (mg/s)	
mass flux of leakage from Haul Road Pond - PW4		M gHRp4 =	0.00001 (mg/s)	
mass flux of leakage from RTH Pond - PW3		M gRTHp =	0.00000 (mg/s)	
mass flux of liner leakage from WWTF pond		M gWTFp =	0.00111 (mg/s)	
mass flux of surface water into SW-004A		M s4A =	- (mg/s)	
mass flux of ground water into SW-004A		M g4A =	0.64113 (mg/s)	
mass flux of West Pit overflow		M sms =	#N/A (mg/s)	
mass flux of liner leakage from Cat 1 stockpile		M gC12 =	- (mg/s)	
mass flux of liner leakage from Cat 1 sumps		M gC12s =	0.00000 (mg/s)	
mass flux of seepage from Overburden (Cat 1)		M gO12 =	0.01066 (mg/s)	
mass flux of seepage from Overburden Pond - PW7		M gOp7 =	0.00801 (mg/s)	
mass flux of surface water into SW-005		M s5 =	- (mg/s)	
mass flux of ground water into SW-005		M g5 =	1.04584 (mg/s)	
mass flux of surface water into USGS Gage		M s6 =	- (mg/s)	
mass flux of ground water into USGS Gage		M g6 =	0.21654 (mg/s)	
mass flux of surface water into Colby Lake		M scl =	- (mg/s)	
mass flux of ground water into Colby Lake		M gcl =	0.53905 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP		M shl =	0.03642 (mg/s)	
			Low Flow	
Mass balance at each node	mass flux in river at SW-001	M r1 =	0.1268 (mg/s)	
	mass flux in river at SW-002	M r2 =	0.2924 (mg/s)	
	mass flux in river at SW-003	M r3 =	0.3421 (mg/s)	
	mass flux in river at SW-004	M r4 =	0.5139 (mg/s)	
	mass flux in river at SW-004A	M r4A =	1.1737 (mg/s)	
	mass flux in river at SW-005	M r5 =	2.2196 (mg/s)	
	mass flux in river at USGS Gage	M r6 =	2.4361 (mg/s)	
	mass flux into Colby Lake	M cl =	3.0116 (mg/s)	
Convert mass flux to concentration	Low Flow			
	concentration in river at SW-001	C r1 =	0.00380 (mg/L)	
	concentration in river at SW-002	C r2 =	0.00671 (mg/L)	
	concentration in river at SW-003	C r3 =	0.00734 (mg/L)	
	concentration in river at SW-004	C r4 =	0.00879 (mg/L)	
	concentration in river at SW-004A	C r4A =	0.01181 (mg/L)	
	concentration in river at SW-005	C r5 =	0.01356 (mg/L)	
	concentration in river at USGS Gage	C r6 =	0.01377 (mg/L)	
	concentration in Colby Lake (H)	C cl =	0.00333 (mg/L)	

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 1 Lead			
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0005 (mg/L)	
	concentration of surface water into SW-002	C s2 =	0.0005 (mg/L)	
	concentration of surface water into SW-003	C s3 =	0.0005 (mg/L)	
	concentration of surface water into SW-004	C s4 =	0.0005 (mg/L)	
	concentration of surface water into SW-004A	C s4A =	0.0005 (mg/L)	
	concentration of surface water into SW-005	C s5 =	0.0005 (mg/L)	
	concentration of surface water into USGS Gage	C s6 =	0.0005 (mg/L)	
	concentration of surface water into Colby Lake	C scl =	0.0005 (mg/L)	
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0005 (mg/L)	
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0002 (mg/L)	
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)	
	concentration of ground water into SW-001	C g1 =	0.0011 (mg/L)	
	concentration of ground water into SW-002	C g2 =	0.0011 (mg/L)	
	concentration of ground water into SW-003	C g3 =	0.0011 (mg/L)	
	concentration of ground water into SW-004	C g4 =	0.0011 (mg/L)	
	concentration of ground water into SW-004A	C g4A =	0.0011 (mg/L)	
	concentration of ground water into SW-005	C g5 =	0.0011 (mg/L)	
	concentration of ground water into USGS Gage	C g6 =	0.0011 (mg/L)	
	concentration of ground water into Colby Lake	C gcl =	0.0011 (mg/L)	
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)	
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)	
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.0035 (mg/L)	
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.0136 (mg/L)	
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0182 (mg/L)	
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0283 (mg/L)	
	concentration of liner leakage from LOSP	C gC4LO =	0.0047 (mg/L)	
	concentration of seepage from Overburden (Storage)	C gOS =	0.0007 (mg/L)	
	concentration of seepage from Overburden (Cat 1)	C gO12 =	- (mg/L)	
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.0035 (mg/L)	
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.0136 (mg/L)	
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.0182 (mg/L)	
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0283 (mg/L)	
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0047 (mg/L)	
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0007 (mg/L)	
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	0.0007 (mg/L)	
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0011 (mg/L)	
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0011 (mg/L)	
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0011 (mg/L)	
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0029 (mg/L)	
	Convert concentration to mass flux	Low Flow		
		mass flux of surface water into SW-001	M s1 =	- (mg/s)
		mass flux of ground water into SW-001	M g1 =	0.00571 (mg/s)
		mass flux of surface discharges from upstream of PM-1	M sns =	0.00425 (mg/s)
mass flux of surface water into SW-002		M s2 =	- (mg/s)	
mass flux of ground water into SW-002		M g2 =	0.01139 (mg/s)	
mass flux of surface water into SW-003		M s3 =	- (mg/s)	
mass flux of ground water into SW-003		M g3 =	0.00342 (mg/s)	
mass flux of seepage from East Pit to SW-003		M gep_003 =	#N/A (mg/s)	
mass flux of liner leakage from Cat 2/3 stockpile to SW-003		M gC3_003 =	0.00000 (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-003		M gC3LO_003 =	0.00000 (mg/s)	
mass flux of liner leakage from Cat 2/3 sumps to SW-003		M gC3s_003 =	0.00000 (mg/s)	
mass flux of surface water into SW-004		M s4 =	- (mg/s)	
mass flux of ground water into SW-004		M g4 =	0.01023 (mg/s)	
mass flux of seepage from East Pit to SW-004		M gep_004 =	#N/A (mg/s)	
mass flux of seepage from West Pit		M gwp =	#N/A (mg/s)	
mass flux of liner leakage from Cat 2/3 stockpile to SW-004		M gC3_004 =	- (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-004		M gC3LO_004 =	0.00000 (mg/s)	
mass flux of liner leakage from Cat 4 stockpile		M gC4 =	0.00000 (mg/s)	
mass flux of liner leakage from LOSP		M gC4LO =	0.00000 (mg/s)	
mass flux of seepage from Overburden (Storage)		M gOS =	0.00146 (mg/s)	
mass flux of liner leakage from Cat 3LO sumps to SW-004		M gC3LOs_004 =	0.00000 (mg/s)	
mass flux of liner leakage from Cat 4 sumps		M gC4s =	0.00000 (mg/s)	
mass flux of liner leakage from LOSP sumps		M gC4LOs =	0.00000 (mg/s)	
mass flux of seepage from Overburden Ponds - PW1		M gOp1 =	0.00036 (mg/s)	
mass flux of leakage from Haul Road Pond - PW2		M gHRp2 =	0.00000 (mg/s)	
mass flux of leakage from Haul Road Pond - PW4		M gHRp4 =	0.00000 (mg/s)	
mass flux of leakage from RTH Pond - PW3		M gRTHp =	0.00000 (mg/s)	
mass flux of liner leakage from WWTF pond		M gWTFp =	0.00001 (mg/s)	
mass flux of surface water into SW-004A		M s4A =	- (mg/s)	
mass flux of ground water into SW-004A		M g4A =	0.04411 (mg/s)	
mass flux of West Pit overflow		M sms =	#N/A (mg/s)	
mass flux of liner leakage from Cat 1 stockpile		M gC12 =	- (mg/s)	
mass flux of liner leakage from Cat 1 sumps		M gC12s =	0.00000 (mg/s)	
mass flux of seepage from Overburden (Cat 1)		M gO12 =	- (mg/s)	
mass flux of seepage from Overburden Pond - PW7		M gOp7 =	0.00068 (mg/s)	
mass flux of surface water into SW-005		M s5 =	- (mg/s)	
mass flux of ground water into SW-005		M g5 =	0.07195 (mg/s)	
mass flux of surface water into USGS Gage		M s6 =	- (mg/s)	
mass flux of ground water into USGS Gage		M g6 =	0.01490 (mg/s)	
mass flux of surface water into Colby Lake		M scl =	- (mg/s)	
mass flux of ground water into Colby Lake		M gcl =	0.03708 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP		M shl =	0.00552 (mg/s)	
Mass balance at each node	Low Flow			
	mass flux in river at SW-001	M r1 =	0.0100 (mg/s)	
	mass flux in river at SW-002	M r2 =	0.0213 (mg/s)	
	mass flux in river at SW-003	M r3 =	0.0248 (mg/s)	
	mass flux in river at SW-004	M r4 =	0.0368 (mg/s)	
	mass flux in river at SW-004A	M r4A =	0.0816 (mg/s)	
	mass flux in river at SW-005	M r5 =	0.1536 (mg/s)	
Convert mass flux to concentration	mass flux in river at USGS Gage	M r6 =	0.1685 (mg/s)	
	mass flux into Colby Lake	M cl =	0.2111 (mg/s)	
	Low Flow			
	concentration in river at SW-001	C r1 =	0.00030 (mg/L)	
	concentration in river at SW-002	C r2 =	0.00049 (mg/L)	
	concentration in river at SW-003	C r3 =	0.00053 (mg/L)	
	concentration in river at SW-004	C r4 =	0.00063 (mg/L)	
	concentration in river at SW-004A	C r4A =	0.00082 (mg/L)	
	concentration in river at SW-005	C r5 =	0.00094 (mg/L)	
	concentration in river at USGS Gage	C r6 =	0.00095 (mg/L)	
	concentration in Colby Lake (H)	C cl =	0.00057 (mg/L)	

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 1 Antimony		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0015 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0015 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0015 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0015 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0015 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0015 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0015 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0015 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0015 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0015 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0015 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0015 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0015 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0015 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0015 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0015 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0015 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0015 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.0800 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.0800 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0800 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0800 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.0016 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0003 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.0004 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.0800 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.0800 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.0800 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0800 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0016 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0003 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	0.0003 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0015 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0015 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0015 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	0.0301 (mg/L)
Convert concentration to mass flux			Low Flow
	mass flux of surface water into SW-001	M s1 =	(mg/s)
	mass flux of ground water into SW-001	M g1 =	0.00764 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.04245 (mg/s)
	mass flux of surface water into SW-002	M s2 =	(mg/s)
	mass flux of ground water into SW-002	M g2 =	0.01525 (mg/s)
	mass flux of surface water into SW-003	M s3 =	(mg/s)
	mass flux of ground water into SW-003	M g3 =	0.00458 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	(mg/s)
	mass flux of ground water into SW-004	M g4 =	0.01371 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.00065 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.00016 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00006 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.05907 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	0.00022 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	0.00030 (mg/s)
	mass flux of surface water into SW-005	M s5 =	- (mg/s)
	mass flux of ground water into SW-005	M g5 =	0.09636 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.01995 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	0.04967 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.01656 (mg/s)
Mass balance at each node			Low Flow
	mass flux in river at SW-001	M r1 =	0.0501 (mg/s)
	mass flux in river at SW-002	M r2 =	0.0653 (mg/s)
	mass flux in river at SW-003	M r3 =	0.0699 (mg/s)
	mass flux in river at SW-004	M r4 =	0.0845 (mg/s)
	mass flux in river at SW-004A	M r4A =	0.1441 (mg/s)
	mass flux in river at SW-005	M r5 =	0.2405 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M r6 =	0.2604 (mg/s)
	mass flux into Colby Lake	M cl =	0.3267 (mg/s)
			Low Flow
	concentration in river at SW-001	C r1 =	0.00150 (mg/L)
	concentration in river at SW-002	C r2 =	0.00150 (mg/L)
	concentration in river at SW-003	C r3 =	0.00150 (mg/L)
	concentration in river at SW-004	C r4 =	0.00145 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00145 (mg/L)
	concentration in river at SW-005	C r5 =	0.00147 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00147 (mg/L)
	concentration in Colby Lake (H	C cl =	0.00150 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 1 Selenium		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0005 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0005 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0005 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0005 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0005 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0005 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0005 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0005 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0005 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0005 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0019 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0019 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0019 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0019 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0019 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0019 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0019 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0019 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.0029 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.0029 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0029 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0029 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.0029 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0004 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.0019 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.0029 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.0029 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.0029 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0029 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0029 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0004 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	0.0004 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0019 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0019 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0019 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	0.0023 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	(mg/s)
	mass flux of ground water into SW-001	M g1 =	0.00973 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.01415 (mg/s)
	mass flux of surface water into SW-002	M s2 =	(mg/s)
	mass flux of ground water into SW-002	M g2 =	0.01942 (mg/s)
	mass flux of surface water into SW-003	M s3 =	(mg/s)
	mass flux of ground water into SW-003	M g3 =	0.00583 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	(mg/s)
	mass flux of ground water into SW-004	M g4 =	0.01745 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.00096 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.00024 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00000 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.07522 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	0.00107 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	0.00045 (mg/s)
	mass flux of surface water into SW-005	M s5 =	- (mg/s)
	mass flux of ground water into SW-005	M g5 =	0.12270 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.02540 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	- (mg/s)
mass flux of ground water into Colby Lake	M gcl =	0.06324 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.00552 (mg/s)	
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M r1 =	0.0239 (mg/s)
	mass flux in river at SW-002	M r2 =	0.0433 (mg/s)
	mass flux in river at SW-003	M r3 =	0.0491 (mg/s)
	mass flux in river at SW-004	M r4 =	0.0678 (mg/s)
	mass flux in river at SW-004A	M r4A =	0.1445 (mg/s)
	mass flux in river at SW-005	M r5 =	0.2672 (mg/s)
	mass flux in river at USGS Gage	M r6 =	0.2926 (mg/s)
mass flux into Colby Lake	M cl =	0.3614 (mg/s)	
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C r1 =	0.00072 (mg/L)
	concentration in river at SW-002	C r2 =	0.00099 (mg/L)
	concentration in river at SW-003	C r3 =	0.00105 (mg/L)
	concentration in river at SW-004	C r4 =	0.00116 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00145 (mg/L)
	concentration in river at SW-005	C r5 =	0.00163 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00165 (mg/L)
concentration in Colby Lake (H	C cl =	0.00067 (mg/L)	

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 1 Sulfate			
Input concentration data	concentration of surface water into SW-001	C s1 =	9.0000 (mg/L)	
	concentration of surface water into SW-002	C s2 =	9.0000 (mg/L)	
	concentration of surface water into SW-003	C s3 =	9.0000 (mg/L)	
	concentration of surface water into SW-004	C s4 =	9.0000 (mg/L)	
	concentration of surface water into SW-004A	C s4A =	9.0000 (mg/L)	
	concentration of surface water into SW-005	C s5 =	9.0000 (mg/L)	
	concentration of surface water into USGS Gage	C s6 =	9.0000 (mg/L)	
	concentration of surface water into Colby Lake	C scl =	9.0000 (mg/L)	
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	9.0000 (mg/L)	
	concentration of surface water discharges from upstream of PM-1	C sns =	22.0000 (mg/L)	
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)	
	concentration of ground water into SW-001	C g1 =	16.1300 (mg/L)	
	concentration of ground water into SW-002	C g2 =	16.1300 (mg/L)	
	concentration of ground water into SW-003	C g3 =	16.1300 (mg/L)	
	concentration of ground water into SW-004	C g4 =	16.1300 (mg/L)	
	concentration of ground water into SW-004A	C g4A =	16.1300 (mg/L)	
	concentration of ground water into SW-005	C g5 =	16.1300 (mg/L)	
	concentration of ground water into USGS Gage	C g6 =	16.1300 (mg/L)	
	concentration of ground water into Colby Lake	C gcl =	16.1300 (mg/L)	
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)	
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)	
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	112.2445 (mg/L)	
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	2,184.6686 (mg/L)	
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	2,340.0000 (mg/L)	
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	2,340.0000 (mg/L)	
	concentration of liner leakage from LOSP	C gC4LO =	342.1607 (mg/L)	
	concentration of seepage from Overburden (Storage)	C gOS =	35.1700 (mg/L)	
	concentration of seepage from Overburden (Cat 1)	C gO12 =	68.3000 (mg/L)	
	concentration of liner leakage from Cat 1 sumps	C gC12s =	112.2445 (mg/L)	
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	2,184.6686 (mg/L)	
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	2,340.0000 (mg/L)	
	concentration of liner leakage from Cat 4 sumps	C gC4s =	2,340.0000 (mg/L)	
	concentration of liner leakage from LOSP sumps	C gC4LOs =	342.1607 (mg/L)	
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	35.1700 (mg/L)	
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	35.1700 (mg/L)	
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	16.1300 (mg/L)	
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	16.1300 (mg/L)	
	concentration of leakage from RTH Pond - PW3	C gRTHp =	16.1300 (mg/L)	
	concentration of liner leakage from WWTF ponc	C_gWTFp =	202.2758 (mg/L)	
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	(mg/s)	
	mass flux of ground water into SW-001	M g1 =	82.16622 (mg/s)	
	mass flux of surface discharges from upstream of PM-1	M sns =	622.60000 (mg/s)	
	mass flux of surface water into SW-002	M s2 =	(mg/s)	
	mass flux of ground water into SW-002	M g2 =	164.04022 (mg/s)	
	mass flux of surface water into SW-003	M s3 =	(mg/s)	
	mass flux of ground water into SW-003	M g3 =	49.24122 (mg/s)	
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)	
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.11930 (mg/s)	
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.05026 (mg/s)	
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00176 (mg/s)	
	mass flux of surface water into SW-004	M s4 =	(mg/s)	
	mass flux of ground water into SW-004	M g4 =	147.38556 (mg/s)	
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)	
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)	
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)	
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.05026 (mg/s)	
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.01304 (mg/s)	
	mass flux of liner leakage from LOSP	M gC4LO =	0.04502 (mg/s)	
	mass flux of seepage from Overburden (Storage)	M gOS =	76.11262 (mg/s)	
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00180 (mg/s)	
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00164 (mg/s)	
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00046 (mg/s)	
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	18.81988 (mg/s)	
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00614 (mg/s)	
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.01315 (mg/s)	
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)	
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.43312 (mg/s)	
	mass flux of surface water into SW-004A	M s4A =	- (mg/s)	
	mass flux of ground water into SW-004A	M g4A =	635.22346 (mg/s)	
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)	
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	- (mg/s)	
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00246 (mg/s)	
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	38.33651 (mg/s)	
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	35.35856 (mg/s)	
	mass flux of surface water into SW-005	M s5 =	- (mg/s)	
	mass flux of ground water into SW-005	M g5 =	1,036.20733 (mg/s)	
	mass flux of surface water into USGS Gage	M s6 =	- (mg/s)	
	mass flux of ground water into USGS Gage	M g6 =	214.54513 (mg/s)	
mass flux of surface water into Colby Lake	M scl =	- (mg/s)		
mass flux of ground water into Colby Lake	M gcl =	534.08043 (mg/s)		
mass flux of surface water from Hoyt Lakes WWTP	M shl =	99.33300 (mg/s)		
Mass balance at each node	Low Flow			
	mass flux in river at SW-001	M r1 =	704.7662 (mg/s)	
	mass flux in river at SW-002	M r2 =	868.8064 (mg/s)	
	mass flux in river at SW-003	M r3 =	918.2190 (mg/s)	
	mass flux in river at SW-004	M r4 =	1,161.1034 (mg/s)	
	mass flux in river at SW-004A	M r4A =	1,870.0244 (mg/s)	
	mass flux in river at SW-005	M r5 =	2,906.2318 (mg/s)	
	mass flux in river at USGS Gage	M r6 =	3,120.7769 (mg/s)	
	mass flux into Colby Lake	M cl =	3,754.1903 (mg/s)	
	Convert mass flux to concentration	Low Flow		
		concentration in river at SW-001	C r1 =	21.10458 (mg/L)
concentration in river at SW-002		C r2 =	19.94327 (mg/L)	
concentration in river at SW-003		C r3 =	19.69720 (mg/L)	
concentration in river at SW-004		C r4 =	19.86258 (mg/L)	
concentration in river at SW-004A		C r4A =	18.81218 (mg/L)	
concentration in river at SW-005		C r5 =	17.75926 (mg/L)	
concentration in river at USGS Gage		C r6 =	17.63679 (mg/L)	
concentration in Colby Lake (H		C cl =	10.17137 (mg/L)	



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 1 Thallium		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0004 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0004 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0004 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0004 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0004 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0004 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0004 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0004 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0004 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0003 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0000 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0000 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0000 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0000 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0000 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0000 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0000 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0000 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0000 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.0001 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0000 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0001 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0000 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	0.0000 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0000 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0000 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0000 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	0.0009 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	- (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.00002 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.00809 (mg/s)
	mass flux of surface water into SW-002	M s2 =	- (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.00004 (mg/s)
	mass flux of surface water into SW-003	M s3 =	- (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.00001 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	- (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.00004 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.00009 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.00002 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00000 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.00016 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	0.00004 (mg/s)
	mass flux of surface water into SW-005	M s5 =	- (mg/s)
	mass flux of ground water into SW-005	M g5 =	0.00026 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.00005 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	0.00013 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.00441 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M r1 =	0.0081 (mg/s)
	mass flux in river at SW-002	M r2 =	0.0082 (mg/s)
	mass flux in river at SW-003	M r3 =	0.0082 (mg/s)
	mass flux in river at SW-004	M r4 =	0.0083 (mg/s)
	mass flux in river at SW-004A	M r4A =	0.0085 (mg/s)
	mass flux in river at SW-005	M r5 =	0.0088 (mg/s)
	mass flux in river at USGS Gage	M r6 =	0.0088 (mg/s)
mass flux into Colby Lake	M cl =	0.0134 (mg/s)	
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C r1 =	0.00024 (mg/L)
	concentration in river at SW-002	C r2 =	0.00019 (mg/L)
	concentration in river at SW-003	C r3 =	0.00018 (mg/L)
	concentration in river at SW-004	C r4 =	0.00014 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00009 (mg/L)
	concentration in river at SW-005	C r5 =	0.00005 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00005 (mg/L)
	concentration in Colby Lake (H)	C cl =	0.00035 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case	Year 1		
Parameter	Vanadium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0009 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0009 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0009 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0009 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0009 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0009 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0009 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0009 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0009 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	#N/A (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	0.0043 (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0043 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0043 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0043 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0043 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0043 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0043 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0043 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0043 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0173 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.6603 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.8851 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0789 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0008 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0017 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.0014 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0173 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.6603 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_g3LOs =	0.8851 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0789 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0008 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0017 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	0.0017 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0043 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0043 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0043 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0411 (mg/L)

Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M_s1 =	(mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.02190 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.12169 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	(mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.04373 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	(mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.01313 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00004 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00002 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	(mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.03929 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00002 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00374 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00093 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00009 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.16934 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.00079 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	0.00174 (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.27624 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
mass flux of ground water into USGS Gage	M_g6 =	0.05719 (mg/s)	
mass flux of surface water into Colby Lake	M_scl =	- (mg/s)	
mass flux of ground water into Colby Lake	M_gcl =	0.14238 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00993 (mg/s)	

Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	0.1438 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.1873 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.2005 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.2446 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.4164 (mg/s)
	mass flux in river at SW-005	M_r5 =	0.6927 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	0.7498 (mg/s)
mass flux into Colby Lake	M_cl =	0.9022 (mg/s)	

Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C_r1 =	0.00430 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00430 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00430 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00418 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00419 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00423 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00424 (mg/L)
	concentration in Colby Lake (H	C_cl =	0.00137 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 1 Zinc			
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0160 (mg/L)	
	concentration of surface water into SW-002	C s2 =	0.0160 (mg/L)	
	concentration of surface water into SW-003	C s3 =	0.0160 (mg/L)	
	concentration of surface water into SW-004	C s4 =	0.0160 (mg/L)	
	concentration of surface water into SW-004A	C s4A =	0.0160 (mg/L)	
	concentration of surface water into SW-005	C s5 =	0.0160 (mg/L)	
	concentration of surface water into USGS Gage	C s6 =	0.0160 (mg/L)	
	concentration of surface water into Colby Lake	C scl =	0.0160 (mg/L)	
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0620 (mg/L)	
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0073 (mg/L)	
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)	
	concentration of ground water into SW-001	C g1 =	0.0275 (mg/L)	
	concentration of ground water into SW-002	C g2 =	0.0275 (mg/L)	
	concentration of ground water into SW-003	C g3 =	0.0275 (mg/L)	
	concentration of ground water into SW-004	C g4 =	0.0275 (mg/L)	
	concentration of ground water into SW-004A	C g4A =	0.0275 (mg/L)	
	concentration of ground water into SW-005	C g5 =	0.0275 (mg/L)	
	concentration of ground water into USGS Gage	C g6 =	0.0275 (mg/L)	
	concentration of ground water into Colby Lake	C gcl =	0.0275 (mg/L)	
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)	
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)	
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.0900 (mg/L)	
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.0900 (mg/L)	
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0900 (mg/L)	
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0900 (mg/L)	
	concentration of liner leakage from LOSP	C gC4LO =	3.9683 (mg/L)	
	concentration of seepage from Overburden (Storage)	C gOS =	0.0046 (mg/L)	
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.0030 (mg/L)	
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.0900 (mg/L)	
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.0900 (mg/L)	
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.0900 (mg/L)	
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0900 (mg/L)	
	concentration of liner leakage from LOSP sumps	C gC4LOs =	3.9683 (mg/L)	
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0046 (mg/L)	
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	0.0046 (mg/L)	
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0275 (mg/L)	
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0275 (mg/L)	
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0275 (mg/L)	
	concentration of liner leakage from WWTF ponc	C_gWTFp =	0.5679 (mg/L)	
	Convert concentration to mass flux	Low Flow		
		mass flux of surface water into SW-001	M s1 =	(mg/s)
		mass flux of ground water into SW-001	M g1 =	0.14009 (mg/s)
		mass flux of surface discharges from upstream of PM-1	M sns =	0.20744 (mg/s)
mass flux of surface water into SW-002		M s2 =	(mg/s)	
mass flux of ground water into SW-002		M g2 =	0.27967 (mg/s)	
mass flux of surface water into SW-003		M s3 =	(mg/s)	
mass flux of ground water into SW-003		M g3 =	0.08395 (mg/s)	
mass flux of seepage from East Pit to SW-003		M gep_003 =	#N/A (mg/s)	
mass flux of liner leakage from Cat 2/3 stockpile to SW-003		M gC3_003 =	0.00000 (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-003		M gC3LO_003 =	0.00000 (mg/s)	
mass flux of liner leakage from Cat 2/3 sumps to SW-003		M gC3s_003 =	0.00000 (mg/s)	
mass flux of surface water into SW-004		M s4 =	(mg/s)	
mass flux of ground water into SW-004		M g4 =	0.25128 (mg/s)	
mass flux of seepage from East Pit to SW-004		M gep_004 =	#N/A (mg/s)	
mass flux of seepage from West Pit		M gwp =	#N/A (mg/s)	
mass flux of liner leakage from Cat 2/3 stockpile to SW-004		M gC3_004 =	- (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-004		M gC3LO_004 =	0.00000 (mg/s)	
mass flux of liner leakage from Cat 4 stockpile		M gC4 =	0.00000 (mg/s)	
mass flux of liner leakage from LOSP		M gC4LO =	0.00052 (mg/s)	
mass flux of seepage from Overburden (Storage)		M gOS =	0.00987 (mg/s)	
mass flux of liner leakage from Cat 3LO sumps to SW-004		M gC3LOs_004 =	0.00000 (mg/s)	
mass flux of liner leakage from Cat 4 sumps		M gC4s =	0.00000 (mg/s)	
mass flux of liner leakage from LOSP sumps		M gC4LOs =	0.00001 (mg/s)	
mass flux of seepage from Overburden Ponds - PW1		M gOp1 =	0.00244 (mg/s)	
mass flux of leakage from Haul Road Pond - PW2		M gHRp2 =	0.00001 (mg/s)	
mass flux of leakage from Haul Road Pond - PW4		M gHRp4 =	0.00002 (mg/s)	
mass flux of leakage from RTH Pond - PW3		M gRTHp =	0.00000 (mg/s)	
mass flux of liner leakage from WWTF pond		M gWTFp =	0.00122 (mg/s)	
mass flux of surface water into SW-004A		M s4A =	- (mg/s)	
mass flux of ground water into SW-004A		M g4A =	1.08299 (mg/s)	
mass flux of West Pit overflow		M sms =	#N/A (mg/s)	
mass flux of liner leakage from Cat 1 stockpile		M gC12 =	- (mg/s)	
mass flux of liner leakage from Cat 1 sumps		M gC12s =	0.00000 (mg/s)	
mass flux of seepage from Overburden (Cat 1)		M gO12 =	0.00168 (mg/s)	
mass flux of seepage from Overburden Pond - PW7		M gOp7 =	0.00458 (mg/s)	
mass flux of surface water into SW-005		M s5 =	- (mg/s)	
mass flux of ground water into SW-005		M g5 =	1.76663 (mg/s)	
mass flux of surface water into USGS Gage		M s6 =	- (mg/s)	
mass flux of ground water into USGS Gage		M g6 =	0.36578 (mg/s)	
mass flux of surface water into Colby Lake		M scl =	- (mg/s)	
mass flux of ground water into Colby Lake		M gcl =	0.91055 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP		M shl =	0.68429 (mg/s)	
Mass balance at each node	Low Flow			
	mass flux in river at SW-001	M r1 =	0.3475 (mg/s)	
	mass flux in river at SW-002	M r2 =	0.6272 (mg/s)	
	mass flux in river at SW-003	M r3 =	0.7112 (mg/s)	
	mass flux in river at SW-004	M r4 =	0.9765 (mg/s)	
	mass flux in river at SW-004A	M r4A =	2.0658 (mg/s)	
	mass flux in river at SW-005	M r5 =	3.8324 (mg/s)	
	mass flux in river at USGS Gage	M r6 =	4.1962 (mg/s)	
mass flux into Colby Lake	M cl =	5.7930 (mg/s)		
Convert mass flux to concentration	Low Flow			
	concentration in river at SW-001	C r1 =	0.01041 (mg/L)	
	concentration in river at SW-002	C r2 =	0.01440 (mg/L)	
	concentration in river at SW-003	C r3 =	0.01526 (mg/L)	
	concentration in river at SW-004	C r4 =	0.01670 (mg/L)	
	concentration in river at SW-004A	C r4A =	0.02078 (mg/L)	
	concentration in river at SW-005	C r5 =	0.02342 (mg/L)	
	concentration in river at USGS Gage	C r6 =	0.02373 (mg/L)	
	concentration in Colby Lake (H	C cl =	0.01750 (mg/L)	

## FLOWS

Case Flow	Year 1 Average Flow Conditions (mean annual)		
Total flow in Partridge River	flow in river at SW-001	Q_r1_M =	5.70 (cfs)
	flow in river at SW-002	Q_r2_M =	11.35 (cfs)
	flow in river at SW-003	Q_r3_M =	13.08 (cfs)
	flow in river at SW-004	Q_r4_M =	19.44 (cfs)
	flow in river at SW-004A	Q_r4a_M =	44.78 (cfs)
	flow in river at SW-005	Q_r5_M =	83.18 (cfs)
	flow in river at USGS Gage	Q_r6_M =	87.53 (cfs)
	total flow into Colby Lake	Q_cl_M =	112.65 (cfs)
	flow check	Q_ck_M =	112.65 (cfs)
input flow data	surface water flow into SW-001	Q_s1_M =	4.52 (cfs)
	surface water flow into SW-002	Q_s2_M =	5.29 (cfs)
	surface water flow into SW-003	Q_s3_M =	1.62 (cfs)
	surface water flow into SW-004	Q_s4_M =	5.95 (cfs)
	surface water flow into SW-004A	Q_s4a_M =	23.89 (cfs)
	surface water flow into SW-005	Q_s5_M =	36.13 (cfs)
	surface water flow into USGS Gage	Q_s6_M =	3.88 (cfs)
	surface water flow into Colby Lake	Q_scl_M =	23.56 (cfs)
	surface water inflow from Hoyt Lakes WWTP	Q_shl_M =	0.39 (cfs)
	surface water inflow from discharges upstream of PM-1	Q_sns_M =	1.00 (cfs)
	surface water flow from West Pit overflow	Q_sms_M =	- (cfs)
	ground water flow into SW-001	Q_g1_M =	0.18 (cfs)
	ground water flow into SW-002	Q_g2_M =	0.36 (cfs)
	ground water flow into SW-003	Q_g3_M =	0.11 (cfs)
	ground water flow into SW-004	Q_g4_M =	0.32 (cfs)
	ground water flow into SW-004A	Q_g4a_M =	1.39 (cfs)
	ground water flow into SW-005	Q_g5_M =	2.27 (cfs)
	ground water flow into USGS Gage	Q_g6_M =	0.47 (cfs)
	ground water flow into Colby Lake	Q_gcl_M =	1.17 (cfs)
	ground water seepage from East Pit to SW-003	Q_gep_003_M =	- (cfs)
	ground water seepage from East Pit to SW-004	Q_gep_004_M =	- (cfs)
	ground water seepage from West Pit	Q_gwp_M =	- (cfs)
	ground water liner leakage from Cat 1 stockpile	Q_gC12_M =	- (cfs)
	ground water liner leakage from Cat 2/3 stockpile to SW-003	Q_gC3_003_M =	0.0000 (cfs)
	ground water liner leakage from Cat 2/3 stockpile to SW-004	Q_gC3_004_M =	- (cfs)
	ground water liner leakage from Cat 3LO stockpile to SW-003	Q_gC3LO_003_M =	0.0000 (cfs)
	ground water liner leakage from Cat 3LO stockpile to SW-004	Q_gC3LO_004_M =	0.0000 (cfs)
	ground water liner leakage from Cat 4 stockpile	Q_gC4_M =	0.0000 (cfs)
	ground water liner leakage from LO SP	Q_gC4LO_M =	0.0000 (cfs)
	ground water seepage from Overburden Storage	Q_gOS_M =	0.0765 (cfs)
	ground water seepage from Overburden (Cat 1)	Q_gO12_M =	0.0228 (cfs)
	ground water liner leakage from Cat 1 sumps	Q_gC12s_M =	0.0000 (cfs)
	ground water liner leakage from Cat 2/3 sumps	Q_gC3s_M =	0.0000 (cfs)
	ground water liner leakage from Cat 3LO sumps	Q_gC3LOs_M =	0.0000 (cfs)
	ground water liner leakage from Cat 4 sumps	Q_gC4s_M =	0.0000 (cfs)
	ground water liner leakage from LO SP sumps	Q_gC4LOs_M =	0.0000 (cfs)
	ground water seepage from Overburden pond - PW1	Q_gOp1_M =	0.0189 (cfs)
	ground water seepage from Overburden pond - PW7	Q_gOp7_M =	0.0355 (cfs)
	ground water leakage from Haul Road pond - PW2	Q_gHRp2_M =	0.0000 (cfs)
	ground water leakage from Haul Road pond - PW4	Q_gHRp4_M =	0.0000 (cfs)
	ground water leakage from RTH pond - PW3	Q_gRTHp_M =	0.0000 (cfs)
	ground water liner leakage from WWTF pond	Q_gWTFp_M =	0.000076 (cfs)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case	Year 1		
Parameter	Silver		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0001 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0001 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0001 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0001 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0001 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0001 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0001 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0001 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0001 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0001 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0006 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0006 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0006 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0006 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0006 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0006 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0006 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0006 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.0007 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.0007 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0007 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0007 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.0001 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	- (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.0007 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.0007 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.0007 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0007 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0001 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	- (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	- (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0006 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0006 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0006 (mg/L)
	concentration of liner leakage from WWTF pond	C gWTFp =	0.0007 (mg/L)
Average Flow			
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	0.01279 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.00280 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.00340 (mg/s)
	mass flux of surface water into SW-002	M s2 =	0.01497 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.00559 (mg/s)
	mass flux of surface water into SW-003	M s3 =	0.00457 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.00168 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep 003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3 003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO 003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s 003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	0.01684 (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.00503 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep 004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3 004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO 004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	- (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs 004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00000 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	0.06760 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.02166 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	- (mg/s)
	mass flux of surface water into SW-005	M s5 =	0.10224 (mg/s)
	mass flux of ground water into SW-005	M g5 =	0.03533 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	0.01098 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.00732 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	0.06667 (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	0.01821 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.00110 (mg/s)
Average Flow			
Mass balance at each node	mass flux in river at SW-001	M r1 =	0.0190 (mg/s)
	mass flux in river at SW-002	M r2 =	0.0396 (mg/s)
	mass flux in river at SW-003	M r3 =	0.0458 (mg/s)
	mass flux in river at SW-004	M r4 =	0.0677 (mg/s)
	mass flux in river at SW-004A	M r4A =	0.1569 (mg/s)
	mass flux in river at SW-005	M r5 =	0.2945 (mg/s)
	mass flux in river at USGS Gage	M r6 =	0.3128 (mg/s)
mass flux into Colby Lake	M cl =	0.3988 (mg/s)	
Average Flow			
Convert mass flux to concentration	concentration in river at SW-001	C r1 =	0.00012 (mg/L)
	concentration in river at SW-002	C r2 =	0.00012 (mg/L)
	concentration in river at SW-003	C r3 =	0.00012 (mg/L)
	concentration in river at SW-004	C r4 =	0.00012 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00012 (mg/L)
	concentration in river at SW-005	C r5 =	0.00013 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00013 (mg/L)
concentration in Colby Lake	C cl =	0.00013 (mg/L)	

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case	Year 1		
Parameter	Aluminum		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0700 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0700 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0700 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0700 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0700 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0700 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0700 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0700 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0700 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0173 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.1250 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.1250 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.1250 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.1250 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.1250 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.1250 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.1250 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.1250 (mg/L)
	concentration of ground water seepage from East Pit	C_ggp =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	1.6800 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	1.6800 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	1.6800 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	1.6800 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	2.2439 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.4106 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.1400 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	1.6800 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	1.6800 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_g3LOs =	1.6800 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	1.6800 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	2.2439 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.4106 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	0.4106 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.1250 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.1250 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.1250 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	1.1077 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	8.95493 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.63675 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.48959 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	10.48170 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	1.27124 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	3.20178 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.38160 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00015 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00006 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	11.78945 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	1.14217 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00006 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00002 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00048 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.88859 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.21972 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00005 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00010 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00237 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	47.31716 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	4.92269 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00004 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.09014 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	0.41280 (mg/s)
	mass flux of surface water into SW-005	M_s5 =	71.56589 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	8.03013 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	7.68573 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	1.66263 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	46.67236 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	4.13888 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.77259 (mg/s)
Mass balance at each node	Average Flow		
	mass flux in river at SW-001	M_r1 =	10.0813 (mg/s)
	mass flux in river at SW-002	M_r2 =	21.8342 (mg/s)
	mass flux in river at SW-003	M_r3 =	25.4178 (mg/s)
	mass flux in river at SW-004	M_r4 =	39.4608 (mg/s)
	mass flux in river at SW-004A	M_r4A =	92.2036 (mg/s)
	mass flux in river at SW-005	M_r5 =	171.7997 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	181.1480 (mg/s)
	mass flux into Colby Lake	M_cl =	232.7318 (mg/s)
	Average Flow		
	concentration in river at SW-001	C_r1 =	0.06249 (mg/L)
	concentration in river at SW-002	C_r2 =	0.06797 (mg/L)
	concentration in river at SW-003	C_r3 =	0.06869 (mg/L)
	concentration in river at SW-004	C_r4 =	0.07171 (mg/L)
concentration in river at SW-004A	C_r4A =	0.07276 (mg/L)	
	concentration in river at SW-005	C_r5 =	0.07299 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.07313 (mg/L)
	concentration in Colby Lake	C_cl =	0.07301 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case		Year 1	
Parameter		Arsenic	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0021 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0021 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0021 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0021 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0021 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0021 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0021 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0021 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0021 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0065 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0022 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0022 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0022 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0022 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0022 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0022 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0022 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0022 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0165 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.7100 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.7100 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.4437 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0022 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0016 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.0027 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0165 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.7100 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.7100 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.4437 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0022 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0016 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	0.0016 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0022 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0022 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0022 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0475 (mg/L)
		Average Flow	
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	0.26993 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.01100 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.18395 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	0.31595 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.02197 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.09651 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00659 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00006 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00002 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.35537 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.01974 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00002 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00338 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00083 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00010 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	1.42627 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.08506 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.00174 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	0.00157 (mg/s)
	mass flux of surface water into SW-005	M_s5 =	2.15720 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.13876 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.23167 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.02873 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	1.40684 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.07152 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.02329 (mg/s)
		Average Flow	
Mass balance at each node	mass flux in river at SW-001	M_r1 =	0.4649 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.8028 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.9060 (mg/s)
	mass flux in river at SW-004	M_r4 =	1.2854 (mg/s)
	mass flux in river at SW-004A	M_r4A =	2.8001 (mg/s)
	mass flux in river at SW-005	M_r5 =	5.0960 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	5.3564 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	6.8581 (mg/s)
			Average Flow
	concentration in river at SW-001	C_r1 =	0.00288 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00250 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00245 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00234 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00221 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00216 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00216 (mg/L)
	concentration in Colby Lake	C_cl =	0.00215 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case	Year 1		
Parameter	Boron		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0450 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0450 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0450 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0450 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0450 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0450 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0450 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0450 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0450 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0960 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0870 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0870 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0870 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0870 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0870 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0870 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0870 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0870 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.0619 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.7600 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.7600 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.7600 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.0746 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0622 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.0370 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.0619 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.7600 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.7600 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.7600 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0746 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0622 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	0.0622 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0870 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0870 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0870 (mg/L)
	concentration of liner leakage from WWTF ponc	C gWTFp =	0.1253 (mg/L)
			Average Flow
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	5.75674 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.44318 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	2.71680 (mg/s)
	mass flux of surface water into SW-002	M s2 =	6.73824 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.88478 (mg/s)
	mass flux of surface water into SW-003	M s3 =	2.05829 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.26559 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.00007 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00003 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	7.57893 (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.79495 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00003 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00001 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00002 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.13461 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.03328 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00003 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00007 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00027 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	30.41817 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	3.42619 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	0.02382 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	0.06253 (mg/s)
	mass flux of surface water into SW-005	M s5 =	46.00664 (mg/s)
	mass flux of ground water into SW-005	M g5 =	5.58897 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	4.94083 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	1.15719 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	30.00366 (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	2.88066 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.49667 (mg/s)
			Average Flow
Mass balance at each node	mass flux in river at SW-001	M r1 =	8.9167 (mg/s)
	mass flux in river at SW-002	M r2 =	16.5397 (mg/s)
	mass flux in river at SW-003	M r3 =	18.8637 (mg/s)
	mass flux in river at SW-004	M r4 =	27.4059 (mg/s)
	mass flux in river at SW-004A	M r4A =	61.3366 (mg/s)
	mass flux in river at SW-005	M r5 =	112.9322 (mg/s)
	mass flux in river at USGS Gage	M r6 =	119.0303 (mg/s)
	mass flux into Colby Lake	M cl =	152.4112 (mg/s)
			Average Flow
Convert mass flux to concentration	concentration in river at SW-001	C r1 =	0.05527 (mg/L)
	concentration in river at SW-002	C r2 =	0.05149 (mg/L)
	concentration in river at SW-003	C r3 =	0.05098 (mg/L)
	concentration in river at SW-004	C r4 =	0.04980 (mg/L)
	concentration in river at SW-004A	C r4A =	0.04840 (mg/L)
	concentration in river at SW-005	C r5 =	0.04798 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.04805 (mg/L)
	concentration in Colby Lake	C cl =	0.04781 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case	Year 1				
Parameter	Barium				
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0077	(mg/L)	
	concentration of surface water into SW-002	C_s2 =	0.0077	(mg/L)	
	concentration of surface water into SW-003	C_s3 =	0.0077	(mg/L)	
	concentration of surface water into SW-004	C_s4 =	0.0077	(mg/L)	
	concentration of surface water into SW-004A	C_s4A =	0.0077	(mg/L)	
	concentration of surface water into SW-005	C_s5 =	0.0077	(mg/L)	
	concentration of surface water into USGS Gage	C_s6 =	0.0077	(mg/L)	
	concentration of surface water into Colby Lake	C_scl =	0.0077	(mg/L)	
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0077	(mg/L)	
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0050	(mg/L)	
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A	(mg/L)	
	concentration of ground water into SW-001	C_g1 =	0.0219	(mg/L)	
	concentration of ground water into SW-002	C_g2 =	0.0219	(mg/L)	
	concentration of ground water into SW-003	C_g3 =	0.0219	(mg/L)	
	concentration of ground water into SW-004	C_g4 =	0.0219	(mg/L)	
	concentration of ground water into SW-004A	C_g4A =	0.0219	(mg/L)	
	concentration of ground water into SW-005	C_g5 =	0.0219	(mg/L)	
	concentration of ground water into USGS Gage	C_g6 =	0.0219	(mg/L)	
	concentration of ground water into Colby Lake	C_gcl =	0.0219	(mg/L)	
	concentration of ground water seepage from East Pit	C_gwp =	#N/A	(mg/L)	
	concentration of ground water seepage from West Pit	C_gwp =	#N/A	(mg/L)	
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.1900	(mg/L)	
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.1900	(mg/L)	
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.1900	(mg/L)	
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.1900	(mg/L)	
	concentration of liner leakage from LOSP	C_gC4LO =	0.0190	(mg/L)	
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0168	(mg/L)	
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.0140	(mg/L)	
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.1900	(mg/L)	
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.1900	(mg/L)	
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.1900	(mg/L)	
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.1900	(mg/L)	
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0190	(mg/L)	
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0168	(mg/L)	
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	0.0168	(mg/L)	
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0219	(mg/L)	
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0219	(mg/L)	
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0219	(mg/L)	
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0761	(mg/L)	
					Average Flow
	Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	0.98248	(mg/s)
mass flux of ground water into SW-001		M_g1 =	0.11166	(mg/s)	
mass flux of surface discharges from upstream of PM-1		M_sns =	0.14150	(mg/s)	
mass flux of surface water into SW-002		M_s2 =	1.14999	(mg/s)	
mass flux of ground water into SW-002		M_g2 =	0.22292	(mg/s)	
mass flux of surface water into SW-003		M_s3 =	0.35128	(mg/s)	
mass flux of ground water into SW-003		M_g3 =	0.06692	(mg/s)	
mass flux of seepage from East Pit to SW-003		M_gep_003 =	#N/A	(mg/s)	
mass flux of liner leakage from Cat 2/3 stockpile to SW-003		M_gC3_003 =	0.00002	(mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-003		M_gC3LO_00 =	0.00001	(mg/s)	
mass flux of liner leakage from Cat 2/3 sumps to SW-003		M_gC3s_003 =	0.00000	(mg/s)	
mass flux of surface water into SW-004		M_s4 =	1.29347	(mg/s)	
mass flux of ground water into SW-004		M_g4 =	0.20029	(mg/s)	
mass flux of seepage from East Pit to SW-004		M_gep_004 =	#N/A	(mg/s)	
mass flux of seepage from West Pit		M_gwp =	#N/A	(mg/s)	
mass flux of liner leakage from Cat 2/3 stockpile to SW-004		M_gC3_004 =	-	(mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-004		M_gC3LO_00 =	0.00001	(mg/s)	
mass flux of liner leakage from Cat 4 stockpile		M_gC4 =	0.00000	(mg/s)	
mass flux of liner leakage from LOSP		M_gC4LO =	0.00000	(mg/s)	
mass flux of seepage from Overburden (Storage)		M_gOS =	0.03643	(mg/s)	
mass flux of liner leakage from Cat 3LO sumps to SW-004		M_gC3LOs_0 =	0.00000	(mg/s)	
mass flux of liner leakage from Cat 4 sumps		M_gC4s =	0.00000	(mg/s)	
mass flux of liner leakage from LOSP sumps		M_gC4LOs =	0.00000	(mg/s)	
mass flux of seepage from Overburden Ponds - PW1		M_gOp1 =	0.00901	(mg/s)	
mass flux of leakage from Haul Road Pond - PW2		M_gHRp2 =	0.00001	(mg/s)	
mass flux of leakage from Haul Road Pond - PW4		M_gHRp4 =	0.00002	(mg/s)	
mass flux of leakage from RTH Pond - PW3		M_gRTHp =	0.00000	(mg/s)	
mass flux of liner leakage from WWTF pond		M_gWTFp =	0.00016	(mg/s)	
mass flux of surface water into SW-004A		M_s4A =	5.19137	(mg/s)	
mass flux of ground water into SW-004A		M_g4A =	0.86324	(mg/s)	
mass flux of West Pit overflow		M_sms =	#N/A	(mg/s)	
mass flux of liner leakage from Cat 1 stockpile		M_gC12 =	-	(mg/s)	
mass flux of liner leakage from Cat 1 sumps		M_gC12s =	0.00000	(mg/s)	
mass flux of seepage from Overburden (Cat 1)		M_gO12 =	0.00901	(mg/s)	
mass flux of seepage from Overburden Pond - PW7		M_gOp7 =	0.01692	(mg/s)	
mass flux of surface water into SW-005		M_s5 =	7.85180	(mg/s)	
mass flux of ground water into SW-005		M_g5 =	1.40816	(mg/s)	
mass flux of surface water into USGS Gage		M_s6 =	0.84323	(mg/s)	
mass flux of ground water into USGS Gage		M_g6 =	0.29156	(mg/s)	
mass flux of surface water into Colby Lake		M_scl =	5.12062	(mg/s)	
mass flux of ground water into Colby Lake		M_gcl =	0.72579	(mg/s)	
mass flux of surface water from Hoyt Lakes WWTP		M_shl =	0.08476	(mg/s)	
				Average Flow	
Mass balance at each node	mass flux in river at SW-001	M_r1 =	1.2358	(mg/s)	
	mass flux in river at SW-002	M_r2 =	2.6086	(mg/s)	
	mass flux in river at SW-003	M_r3 =	3.0268	(mg/s)	
	mass flux in river at SW-004	M_r4 =	4.5662	(mg/s)	
	mass flux in river at SW-004A	M_r4A =	10.6467	(mg/s)	
	mass flux in river at SW-005	M_r5 =	19.9067	(mg/s)	
	mass flux in river at USGS Gage	M_r6 =	21.0415	(mg/s)	
mass flux into Colby Lake	M_cl =	26.9727	(mg/s)		
				Average Flow	
Convert mass flux to concentration	concentration in river at SW-001	C_r1 =	0.00766	(mg/L)	
	concentration in river at SW-002	C_r2 =	0.00812	(mg/L)	
	concentration in river at SW-003	C_r3 =	0.00818	(mg/L)	
	concentration in river at SW-004	C_r4 =	0.00830	(mg/L)	
	concentration in river at SW-004A	C_r4A =	0.00840	(mg/L)	
	concentration in river at SW-005	C_r5 =	0.00846	(mg/L)	
	concentration in river at USGS Gage	C_r6 =	0.00849	(mg/L)	
	concentration in Colby Lake	C_cl =	0.00846	(mg/L)	

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case		Year 1	
Parameter		Beryllium	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0001 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0001 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0001 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0001 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0001 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0001 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0001 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0001 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0001 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0001 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0001 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0001 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0001 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0001 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0001 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0001 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0001 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0001 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0002 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0002 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0023 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	- (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0002 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0002 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0023 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	- (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	- (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0001 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0001 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0001 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0005 (mg/L)
		Average Flow	
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	0.01279 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00074 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.00283 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	0.01497 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.00147 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.00457 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00044 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.01684 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.00132 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	- (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00000 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	0.06760 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.00571 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	- (mg/s)
	mass flux of surface water into SW-005	M_s5 =	0.10224 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.00931 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.01098 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.00193 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	0.06667 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.00480 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00110 (mg/s)
		Average Flow	
Mass balance at each node	mass flux in river at SW-001	M_r1 =	0.0164 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.0328 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.0378 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.0560 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.1293 (mg/s)
	mass flux in river at SW-005	M_r5 =	0.2409 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	0.2538 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	0.3263 (mg/s)
			Average Flow
	concentration in river at SW-001	C_r1 =	0.00010 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00010 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00010 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00010 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00010 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00010 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00010 (mg/L)
	concentration in Colby Lake	C_cl =	0.00010 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case	Year 1		
Parameter	Calcium		
Input concentration data	concentration of surface water into SW-001	C s1 =	17.0000 (mg/L)
	concentration of surface water into SW-002	C s2 =	17.0000 (mg/L)
	concentration of surface water into SW-003	C s3 =	17.0000 (mg/L)
	concentration of surface water into SW-004	C s4 =	17.0000 (mg/L)
	concentration of surface water into SW-004A	C s4A =	17.0000 (mg/L)
	concentration of surface water into SW-005	C s5 =	17.0000 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	17.0000 (mg/L)
	concentration of surface water into Colby Lake	C scl =	17.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	17.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	24.5000 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	14.7900 (mg/L)
	concentration of ground water into SW-002	C g2 =	14.7900 (mg/L)
	concentration of ground water into SW-003	C g3 =	14.7900 (mg/L)
	concentration of ground water into SW-004	C g4 =	14.7900 (mg/L)
	concentration of ground water into SW-004A	C g4A =	14.7900 (mg/L)
	concentration of ground water into SW-005	C g5 =	14.7900 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	14.7900 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	14.7900 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	85.8708 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	540.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	540.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	540.0000 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	10.2330 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	9.3700 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	15.8000 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	85.8708 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	540.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	540.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	540.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	10.2330 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	9.3700 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	9.3700 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	14.7900 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	14.7900 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	14.7900 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	76.3956 (mg/L)
Convert concentration to mass flux	Average Flow		
	mass flux of surface water into SW-001	M s1 =	2,174.76906 (mg/s)
	mass flux of ground water into SW-001	M g1 =	75.34026 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	693.35000 (mg/s)
	mass flux of surface water into SW-002	M s2 =	2,545.55623 (mg/s)
	mass flux of ground water into SW-002	M g2 =	150.41258 (mg/s)
	mass flux of surface water into SW-003	M s3 =	777.57630 (mg/s)
	mass flux of ground water into SW-003	M g3 =	45.15051 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep 003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.04851 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_00 =	0.01896 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00044 (mg/s)
	mass flux of surface water into SW-004	M s4 =	2,863.15274 (mg/s)
	mass flux of ground water into SW-004	M g4 =	135.14150 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep 004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_00 =	0.01896 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00492 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00220 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	20.27794 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_0 =	0.00042 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00038 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00001 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	5.01400 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00563 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.01206 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.16358 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	11,491.30985 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	582.45226 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00188 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	10.17346 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	9.42024 (mg/s)
	mass flux of surface water into SW-005	M s5 =	17,380.28692 (mg/s)
	mass flux of ground water into SW-005	M g5 =	950.12439 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	1,866.53497 (mg/s)
mass flux of ground water into USGS Gage	M g6 =	196.72179 (mg/s)	
mass flux of surface water into Colby Lake	M scl =	11,334.71600 (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	489.71169 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	187.62900 (mg/s)	
Mass balance at each node	Average Flow		
	mass flux in river at SW-001	M r1 =	2.943.4593 (mg/s)
	mass flux in river at SW-002	M r2 =	5.639.4281 (mg/s)
	mass flux in river at SW-003	M r3 =	6.462.2229 (mg/s)
	mass flux in river at SW-004	M r4 =	9.486.0176 (mg/s)
	mass flux in river at SW-004A	M r4A =	21.579.3753 (mg/s)
	mass flux in river at SW-005	M r5 =	39.909.7866 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M r6 =	41.973.0434 (mg/s)
	mass flux into Colby Lake	M cl =	53.985.1001 (mg/s)
	Average Flow		
	concentration in river at SW-001	C r1 =	18.24591 (mg/L)
	concentration in river at SW-002	C r2 =	17.55573 (mg/L)
	concentration in river at SW-003	C r3 =	17.46439 (mg/L)
	concentration in river at SW-004	C r4 =	17.23841 (mg/L)
	concentration in river at SW-004A	C r4A =	17.02819 (mg/L)
	concentration in river at SW-005	C r5 =	16.95486 (mg/L)
	concentration in river at USGS Gage	C r6 =	16.94524 (mg/L)
	concentration in Colby Lake	C cl =	16.93449 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case		Year 1	
Parameter		Cadmium	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0001 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0001 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0001 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0001 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0001 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0001 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0001 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0001 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0001 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0001 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0001 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0001 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0001 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0001 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0001 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0001 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0001 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0001 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0002 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0002 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0145 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0001 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0002 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0002 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0145 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0001 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	0.0001 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0001 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0001 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0001 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0021 (mg/L)
		Average Flow	
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	0.01279 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00051 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.00283 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	0.01497 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.00102 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.00457 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00031 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.01684 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.00091 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00013 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00003 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00000 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	0.06760 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.00394 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	0.00006 (mg/s)
	mass flux of surface water into SW-005	M_s5 =	0.10224 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.00642 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.01098 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.00133 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	0.06667 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.00331 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00110 (mg/s)
		Average Flow	
Mass balance at each node	mass flux in river at SW-001	M_r1 =	0.0161 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.0321 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.0370 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.0549 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.1265 (mg/s)
	mass flux in river at SW-005	M_r5 =	0.2352 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	0.2475 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	0.3186 (mg/s)
			Average Flow
	concentration in river at SW-001	C_r1 =	0.00010 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00010 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00010 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00010 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00010 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00010 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00010 (mg/L)
	concentration in Colby Lake	C_cl =	0.00010 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case	Year 1		
Parameter	Chloride		
Input concentration data	concentration of surface water into SW-001	C_s1 =	8.0000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	8.0000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	8.0000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	8.0000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	8.0000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	8.0000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	8.0000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	8.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	8.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	1.6000 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	6.6000 (mg/L)
	concentration of ground water into SW-002	C_g2 =	6.6000 (mg/L)
	concentration of ground water into SW-003	C_g3 =	6.6000 (mg/L)
	concentration of ground water into SW-004	C_g4 =	6.6000 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	6.6000 (mg/L)
	concentration of ground water into SW-005	C_g5 =	6.6000 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	6.6000 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	6.6000 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	16.4497 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	26.5291 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	35.5634 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	11.4990 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.5640 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	5.3500 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	2.3300 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	16.4497 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	26.5291 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	35.5634 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	11.4990 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.5640 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	5.3500 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	5.3500 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	6.6000 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	6.6000 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	6.6000 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	10.7760 (mg/L)
Convert concentration to mass flux	Average Flow		
	mass flux of surface water into SW-001	M_s1 =	1,023.42074 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	33.62040 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	45.28000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	1,197.90882 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	67.12123 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	365.91826 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	20.14830 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00238 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00125 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00002 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	1,347.36600 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	60.30655 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00125 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00010 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00012 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	11.57812 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00003 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00001 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	2.86285 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00251 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00538 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.02307 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	5,407.67522 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	259.91785 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00036 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	1.50026 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	5.37868 (mg/s)
	mass flux of surface water into SW-005	M_s5 =	8,178.95855 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	423.99060 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	878.36940 (mg/s)
mass flux of ground water into USGS Gage	M_g6 =	87.78660 (mg/s)	
mass flux of surface water into Colby Lake	M_scl =	5,333.98400 (mg/s)	
mass flux of ground water into Colby Lake	M_gcl =	218.53260 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M_shl =	88.29600 (mg/s)	
Mass balance at each node	Average Flow		
	mass flux in river at SW-001	M_r1 =	1,102.3211 (mg/s)
	mass flux in river at SW-002	M_r2 =	2,367.3512 (mg/s)
	mass flux in river at SW-003	M_r3 =	2,753.4214 (mg/s)
	mass flux in river at SW-004	M_r4 =	4,175.5674 (mg/s)
	mass flux in river at SW-004A	M_r4A =	9,850.0398 (mg/s)
	mass flux in river at SW-005	M_r5 =	18,452.9889 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	19,419.1449 (mg/s)
	mass flux into Colby Lake	M_cl =	25,059.9575 (mg/s)
Convert mass flux to concentration	Average Flow		
	concentration in river at SW-001	C_r1 =	6.83307 (mg/L)
	concentration in river at SW-002	C_r2 =	7.36964 (mg/L)
	concentration in river at SW-003	C_r3 =	7.44122 (mg/L)
	concentration in river at SW-004	C_r4 =	7.58803 (mg/L)
	concentration in river at SW-004A	C_r4A =	7.77262 (mg/L)
	concentration in river at SW-005	C_r5 =	7.83938 (mg/L)
	concentration in river at USGS Gage	C_r6 =	7.83984 (mg/L)
concentration in Colby Lake	C_cl =	7.86102 (mg/L)	

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 1 Cobalt		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0005 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0005 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0005 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0005 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0005 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0005 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0005 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0005 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0005 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0005 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0017 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0017 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0017 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0017 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0017 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0017 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0017 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0017 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.0025 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.0520 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0520 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0520 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.1235 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0011 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.0013 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.0025 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.0520 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.0520 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0520 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.1235 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0011 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	0.0011 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0017 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0017 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0017 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	0.0383 (mg/L)
Convert concentration to mass flux	Average Flow		
	mass flux of surface water into SW-001	M s1 =	0.06396 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.00841 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.01415 (mg/s)
	mass flux of surface water into SW-002	M s2 =	0.07487 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.01678 (mg/s)
	mass flux of surface water into SW-003	M s3 =	0.02287 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.00504 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep 003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3 003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO 00 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s 003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	0.08421 (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.01508 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep 004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3 004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO 00 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00003 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.00240 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs 0 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.00059 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00008 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	0.33798 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.06498 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	0.00084 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	0.00112 (mg/s)
	mass flux of surface water into SW-005	M s5 =	0.51118 (mg/s)
	mass flux of ground water into SW-005	M g5 =	0.10600 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	0.05490 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.02195 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	0.33337 (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	0.05463 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.00552 (mg/s)
Mass balance at each node	Average Flow		
	mass flux in river at SW-001	M r1 =	0.0865 (mg/s)
	mass flux in river at SW-002	M r2 =	0.1782 (mg/s)
	mass flux in river at SW-003	M r3 =	0.2061 (mg/s)
	mass flux in river at SW-004	M r4 =	0.3065 (mg/s)
	mass flux in river at SW-004A	M r4A =	0.7134 (mg/s)
	mass flux in river at SW-005	M r5 =	1.3306 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M r6 =	1.4074 (mg/s)
	mass flux into Colby Lake	M cl =	1.8009 (mg/s)
Convert mass flux to concentration	Average Flow		
	concentration in river at SW-001	C r1 =	0.00054 (mg/L)
	concentration in river at SW-002	C r2 =	0.00055 (mg/L)
	concentration in river at SW-003	C r3 =	0.00056 (mg/L)
	concentration in river at SW-004	C r4 =	0.00056 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00056 (mg/L)
	concentration in river at SW-005	C r5 =	0.00057 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00057 (mg/L)
concentration in Colby Lake	C cl =	0.00056 (mg/L)	

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 1 Copper		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0017 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0017 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0017 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0017 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0017 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0017 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0017 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0017 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0190 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0012 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0030 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0030 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0030 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0030 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0030 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0030 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0030 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0030 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0413 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0920 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0920 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0920 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0297 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0214 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.0170 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0413 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0920 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0920 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0920 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0297 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0214 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	0.0214 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0030 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0030 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0030 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0391 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	0.21748 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.01503 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.03509 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	0.25456 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.03000 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.07776 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00901 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.28632 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.02696 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.04640 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.01147 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00008 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	1.14913 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.11618 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.01095 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	0.02155 (mg/s)
	mass flux of surface water into SW-005	M_s5 =	1.73803 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.18951 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.18665 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.03924 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	1.13347 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.09768 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.20970 (mg/s)
Mass balance at each node	mass flux in river at SW-001	M_r1 =	0.2676 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.5522 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.6389 (mg/s)
	mass flux in river at SW-004	M_r4 =	1.0102 (mg/s)
	mass flux in river at SW-004A	M_r4A =	2.3080 (mg/s)
	mass flux in river at SW-005	M_r5 =	4.2365 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	4.4614 (mg/s)
	mass flux into Colby Lake	M_cl =	5.9023 (mg/s)
Convert mass flux to concentration	concentration in river at SW-001	C_r1 =	0.00166 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00172 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00173 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00184 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00182 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00180 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00180 (mg/L)
	concentration in Colby Lake	C_cl =	0.00185 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case	Year 1		
Parameter	Fluoride		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0700 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0700 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0700 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0700 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0700 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0700 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0700 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0700 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0700 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.1400 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.2800 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.2800 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.2800 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.2800 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.2800 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.2800 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.2800 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.2800 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.0629 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.0621 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0621 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0621 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.0630 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.2239 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.4200 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.0629 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.0621 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.0621 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0621 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0630 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.2239 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	0.2239 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.2800 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.2800 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.2800 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.1775 (mg/L)

Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	8.95493 (mg/s)
	mass flux of ground water into SW-001	M g1 =	1.42632 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	3.96200 (mg/s)
	mass flux of surface water into SW-002	M s2 =	10.48170 (mg/s)
	mass flux of ground water into SW-002	M g2 =	2.84757 (mg/s)
	mass flux of surface water into SW-003	M s3 =	3.20178 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.85478 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep 003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3 003 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO 00 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s 003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	11.78945 (mg/s)
	mass flux of ground water into SW-004	M g4 =	2.55846 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep 004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3 004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO 00 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.48453 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs 0 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.11981 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00011 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00023 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00038 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	47.31716 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	11.02682 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	0.27043 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	0.22509 (mg/s)
	mass flux of surface water into SW-005	M s5 =	71.56589 (mg/s)
	mass flux of ground water into SW-005	M g5 =	17.98748 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	7.68573 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	3.72428 (mg/s)
mass flux of surface water into Colby Lake	M scl =	46.67236 (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	9.27108 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.77259 (mg/s)	

Mass balance at each node	Average Flow		
	mass flux in river at SW-001	M r1 =	14.3433 (mg/s)
	mass flux in river at SW-002	M r2 =	27.6725 (mg/s)
	mass flux in river at SW-003	M r3 =	31.7291 (mg/s)
	mass flux in river at SW-004	M r4 =	46.6821 (mg/s)
	mass flux in river at SW-004A	M r4A =	105.5216 (mg/s)
	mass flux in river at SW-005	M r5 =	195.0749 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M r6 =	206.4849 (mg/s)
	mass flux into Colby Lake	M cl =	263.2010 (mg/s)
	Average Flow		
Convert mass flux to concentration	concentration in river at SW-001	C r1 =	0.08891 (mg/L)
	concentration in river at SW-002	C r2 =	0.08615 (mg/L)
	concentration in river at SW-003	C r3 =	0.08575 (mg/L)
	concentration in river at SW-004	C r4 =	0.08483 (mg/L)
	concentration in river at SW-004A	C r4A =	0.08327 (mg/L)
	concentration in river at SW-005	C r5 =	0.08287 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.08336 (mg/L)
	concentration in Colby Lake	C cl =	0.08256 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case	Year 1		
Parameter	Iron		
Input concentration data	concentration of surface water into SW-001	C s1 =	1.6000 (mg/L)
	concentration of surface water into SW-002	C s2 =	1.6000 (mg/L)
	concentration of surface water into SW-003	C s3 =	1.6000 (mg/L)
	concentration of surface water into SW-004	C s4 =	1.6000 (mg/L)
	concentration of surface water into SW-004A	C s4A =	1.6000 (mg/L)
	concentration of surface water into SW-005	C s5 =	1.6000 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	1.6000 (mg/L)
	concentration of surface water into Colby Lake	C scl =	1.6000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	1.6000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0300 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	2.8440 (mg/L)
	concentration of ground water into SW-002	C g2 =	2.8440 (mg/L)
	concentration of ground water into SW-003	C g3 =	2.8440 (mg/L)
	concentration of ground water into SW-004	C g4 =	2.8440 (mg/L)
	concentration of ground water into SW-004A	C g4A =	2.8440 (mg/L)
	concentration of ground water into SW-005	C g5 =	2.8440 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	2.8440 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	2.8440 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.3233 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.8100 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.8100 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.8100 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	35.8496 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.2255 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.1500 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.3233 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.8100 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.8100 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.8100 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	35.8496 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.2255 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	0.2255 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	2.8440 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	2.8440 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	2.8440 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	8.5792 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	204.68415 (mg/s)
	mass flux of ground water into SW-001	M g1 =	14.48734 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.84900 (mg/s)
	mass flux of surface water into SW-002	M s2 =	239.58176 (mg/s)
	mass flux of ground water into SW-002	M g2 =	28.92315 (mg/s)
	mass flux of surface water into SW-003	M s3 =	73.18365 (mg/s)
	mass flux of ground water into SW-003	M g3 =	8.68209 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.00007 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_00 =	0.00003 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	269.47320 (mg/s)
	mass flux of ground water into SW-004	M g4 =	25.98664 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_00 =	0.00003 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00001 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00771 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.48801 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_0 =	0.00000 (mg/s)
mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)	
mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00005 (mg/s)	
mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.12067 (mg/s)	
mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00108 (mg/s)	
mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00232 (mg/s)	
mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)	
mass flux of liner leakage from WWTF pond	M gWTFp =	0.01837 (mg/s)	
mass flux of surface water into SW-004A	M s4A =	1,081.53504 (mg/s)	
mass flux of ground water into SW-004A	M g4A =	112.00096 (mg/s)	
mass flux of West Pit overflow	M sms =	#N/A (mg/s)	
mass flux of liner leakage from Cat 1 stockpile	M gC12 =	- (mg/s)	
mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00001 (mg/s)	
mass flux of seepage from Overburden (Cat 1)	M gO12 =	0.09658 (mg/s)	
mass flux of seepage from Overburden Pond - PW7	M gOp7 =	0.22671 (mg/s)	
mass flux of surface water into SW-005	M s5 =	1,635.79171 (mg/s)	
mass flux of ground water into SW-005	M g5 =	182.70140 (mg/s)	
mass flux of surface water into USGS Gage	M s6 =	175.67388 (mg/s)	
mass flux of ground water into USGS Gage	M g6 =	37.82804 (mg/s)	
mass flux of surface water into Colby Lake	M scl =	1,066.79680 (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	94.16768 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	17.65920 (mg/s)	
Average Flow			
Mass balance at each node	mass flux in river at SW-001	M r1 =	220.0205 (mg/s)
	mass flux in river at SW-002	M r2 =	488.5264 (mg/s)
	mass flux in river at SW-003	M r3 =	570.3912 (mg/s)
	mass flux in river at SW-004	M r4 =	866.4893 (mg/s)
	mass flux in river at SW-004A	M r4A =	2,060.3486 (mg/s)
	mass flux in river at SW-005	M r5 =	3,878.8417 (mg/s)
	mass flux in river at USGS Gage	M r6 =	4,092.3437 (mg/s)
mass flux into Colby Lake	M cl =	5,270.9674 (mg/s)	
Average Flow			
Convert mass flux to concentration	concentration in river at SW-001	C r1 =	1.36386 (mg/L)
	concentration in river at SW-002	C r2 =	1.52080 (mg/L)
	concentration in river at SW-003	C r3 =	1.54150 (mg/L)
	concentration in river at SW-004	C r4 =	1.57462 (mg/L)
	concentration in river at SW-004A	C r4A =	1.62581 (mg/L)
	concentration in river at SW-005	C r5 =	1.64785 (mg/L)
	concentration in river at USGS Gage	C r6 =	1.65215 (mg/L)
	concentration in Colby Lake	C cl =	1.65344 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case	Year 1		
Parameter	Hardness		
Input concentration data	concentration of surface water into SW-001	C s1 =	110.0000 (mg/L)
	concentration of surface water into SW-002	C s2 =	110.0000 (mg/L)
	concentration of surface water into SW-003	C s3 =	110.0000 (mg/L)
	concentration of surface water into SW-004	C s4 =	110.0000 (mg/L)
	concentration of surface water into SW-004A	C s4A =	110.0000 (mg/L)
	concentration of surface water into SW-005	C s5 =	110.0000 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	110.0000 (mg/L)
	concentration of surface water into Colby Lake	C scl =	110.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	110.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	110.0000 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	66.4200 (mg/L)
	concentration of ground water into SW-002	C g2 =	66.4200 (mg/L)
	concentration of ground water into SW-003	C g3 =	66.4200 (mg/L)
	concentration of ground water into SW-004	C g4 =	66.4200 (mg/L)
	concentration of ground water into SW-004A	C g4A =	66.4200 (mg/L)
	concentration of ground water into SW-005	C g5 =	66.4200 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	66.4200 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	66.4200 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	279.9086 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	1,729.3495 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	1,729.3495 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	1,729.3495 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	88.8713 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	43.5200 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	71.5000 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	279.9086 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	1,729.3495 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	1,729.3495 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	1,729.3495 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	88.8713 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	43.5200 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	43.5200 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	66.4200 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	66.4200 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	66.4200 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	268.9289 (mg/L)
Average Flow			
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	14,072.03511 (mg/s)
	mass flux of ground water into SW-001	M g1 =	338.34348 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	3,113.00000 (mg/s)
	mass flux of surface water into SW-002	M s2 =	16,471.24622 (mg/s)
	mass flux of ground water into SW-002	M g2 =	675.48367 (mg/s)
	mass flux of surface water into SW-003	M s3 =	5,031.37606 (mg/s)
	mass flux of ground water into SW-003	M g3 =	202.76516 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.15534 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_00 =	0.06073 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00139 (mg/s)
	mass flux of surface water into SW-004	M s4 =	18,526.28243 (mg/s)
	mass flux of ground water into SW-004	M g4 =	606.90322 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_00 =	0.06073 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.01576 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.01912 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	94.18314 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_0 =	0.00133 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00121 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00012 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	23.28806 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.02527 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.05414 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00002 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.57584 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	74,355.53429 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	2,615.71869 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00613 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	46.03811 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	43.75333 (mg/s)
	mass flux of surface water into SW-005	M s5 =	112,460.68005 (mg/s)
	mass flux of ground water into SW-005	M g5 =	4,266.88722 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	12,077.57922 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	883.45242 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	73,342.28000 (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	2,199.23262 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl =	1,214.07000 (mg/s)
Average Flow			
Mass balance at each node	mass flux in river at SW-001	M r1 =	17,523.3786 (mg/s)
	mass flux in river at SW-002	M r2 =	34,670.1085 (mg/s)
	mass flux in river at SW-003	M r3 =	39,904.4672 (mg/s)
	mass flux in river at SW-004	M r4 =	59,155.8790 (mg/s)
	mass flux in river at SW-004A	M r4A =	136,216.9295 (mg/s)
	mass flux in river at SW-005	M r5 =	252,944.4968 (mg/s)
	mass flux in river at USGS Gage	M r6 =	265,905.5284 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M cl =	342,661.1111 (mg/s)
	Average Flow		
	concentration in river at SW-001	C r1 =	108.62389 (mg/L)
	concentration in river at SW-002	C r2 =	107.92921 (mg/L)
	concentration in river at SW-003	C r3 =	107.84328 (mg/L)
	concentration in river at SW-004	C r4 =	107.50069 (mg/L)
	concentration in river at SW-004A	C r4A =	107.48815 (mg/L)
	concentration in river at SW-005	C r5 =	107.45832 (mg/L)
	concentration in river at USGS Gage	C r6 =	107.35062 (mg/L)
	concentration in Colby Lake	C cl =	107.48878 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case	Year 1		
Parameter	Potassium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	1.3000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	1.3000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	1.3000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	1.3000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	1.3000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	1.3000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	1.3000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	1.3000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	1.3000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	2.7000 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	1.7500 (mg/L)
	concentration of ground water into SW-002	C_g2 =	1.7500 (mg/L)
	concentration of ground water into SW-003	C_g3 =	1.7500 (mg/L)
	concentration of ground water into SW-004	C_g4 =	1.7500 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	1.7500 (mg/L)
	concentration of ground water into SW-005	C_g5 =	1.7500 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	1.7500 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	1.7500 (mg/L)
	concentration of ground water seepage from East Pit	C_ggp =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	18.4614 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	49.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	49.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	49.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	4.7087 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	2.2600 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	4.4500 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	18.4614 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	49.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	49.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	49.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	4.7087 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	2.2600 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	2.2600 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	1.7500 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	1.7500 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	1.7500 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	12.8932 (mg/L)
Convert concentration to mass flux	Average Flow		
	mass flux of surface water into SW-001	M_s1 =	166.30587 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	8.91450 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	76.41000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	194.66018 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	17.79730 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	59.46172 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	5.34235 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00440 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00172 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00004 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	218.94697 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	15.99037 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00172 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00045 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00101 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	4.89094 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00004 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00003 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00001 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	1.20935 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00067 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00143 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.02761 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	878.74722 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	68.91761 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00040 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	2.86531 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	2.27212 (mg/s)
	mass flux of surface water into SW-005	M_s5 =	1,329.08076 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	112.42175 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	142.73503 (mg/s)
mass flux of ground water into USGS Gage	M_g6 =	23.27675 (mg/s)	
mass flux of surface water into Colby Lake	M_scl =	866.77240 (mg/s)	
mass flux of ground water into Colby Lake	M_gcl =	57.94425 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M_shl =	14.34810 (mg/s)	
Mass balance at each node	Average Flow		
	mass flux in river at SW-001	M_r1 =	251.6304 (mg/s)
	mass flux in river at SW-002	M_r2 =	464.0878 (mg/s)
	mass flux in river at SW-003	M_r3 =	528.8961 (mg/s)
	mass flux in river at SW-004	M_r4 =	769.9687 (mg/s)
	mass flux in river at SW-004A	M_r4A =	1,722.7714 (mg/s)
	mass flux in river at SW-005	M_r5 =	3,164.2739 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	3,330.2857 (mg/s)
	mass flux into Colby Lake	M_cl =	4,269.3504 (mg/s)
	Average Flow		
	concentration in river at SW-001	C_r1 =	1.55981 (mg/L)
	concentration in river at SW-002	C_r2 =	1.44472 (mg/L)
	concentration in river at SW-003	C_r3 =	1.42937 (mg/L)
	concentration in river at SW-004	C_r4 =	1.39922 (mg/L)
	concentration in river at SW-004A	C_r4A =	1.35943 (mg/L)
	concentration in river at SW-005	C_r5 =	1.34428 (mg/L)
	concentration in river at USGS Gage	C_r6 =	1.34449 (mg/L)
	concentration in Colby Lake	C_cl =	1.33925 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case		Year 1	
Parameter		Magnesium	
Input concentration data	concentration of surface water into SW-001	C_s1 =	8.0000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	8.0000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	8.0000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	8.0000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	8.0000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	8.0000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	8.0000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	8.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	8.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	10.5000 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	8.0200 (mg/L)
	concentration of ground water into SW-002	C_g2 =	8.0200 (mg/L)
	concentration of ground water into SW-003	C_g3 =	8.0200 (mg/L)
	concentration of ground water into SW-004	C_g4 =	8.0200 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	8.0200 (mg/L)
	concentration of ground water into SW-005	C_g5 =	8.0200 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	8.0200 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	8.0200 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	15.9814 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	93.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	93.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	93.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	15.3947 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	4.8800 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	9.0100 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	15.9814 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	93.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	93.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	93.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	15.3947 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	4.8800 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	4.8800 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	8.0200 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	8.0200 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	8.0200 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	19.0551 (mg/L)
Convert concentration to mass flux	Average Flow		
	mass flux of surface water into SW-001	M_s1 =	1,023.42074 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	40.85388 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	297.15000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	1,197.90882 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	81.56247 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	365.91826 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	24.48324 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00835 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00327 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00007 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	1,347.36600 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	73.28160 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00327 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00085 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00331 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	10.56098 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00007 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00007 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00002 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	2.61135 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00305 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00654 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.04080 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	5,407.67522 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	315.83956 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00035 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	5.80145 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	4.90616 (mg/s)
	mass flux of surface water into SW-005	M_s5 =	8,178.95855 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	515.21282 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	878.36940 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	106.67402 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	5,333.98400 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	265.55022 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	88.29600 (mg/s)
Mass balance at each node	Average Flow		
	mass flux in river at SW-001	M_r1 =	1,361.4248 (mg/s)
	mass flux in river at SW-002	M_r2 =	2,640.8959 (mg/s)
	mass flux in river at SW-003	M_r3 =	3,031.3091 (mg/s)
	mass flux in river at SW-004	M_r4 =	4,465.1871 (mg/s)
	mass flux in river at SW-004A	M_r4A =	10,199.4098 (mg/s)
	mass flux in river at SW-005	M_r5 =	18,893.5812 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	19,878.6246 (mg/s)
Convert mass flux to concentration	Average Flow		
	concentration in river at SW-001	C_r1 =	8.43920 (mg/L)
	concentration in river at SW-002	C_r2 =	8.22120 (mg/L)
	concentration in river at SW-003	C_r3 =	8.19222 (mg/L)
	concentration in river at SW-004	C_r4 =	8.11434 (mg/L)
	concentration in river at SW-004A	C_r4A =	8.04831 (mg/L)
	concentration in river at SW-005	C_r5 =	8.02655 (mg/L)
	concentration in river at USGS Gage	C_r6 =	8.02534 (mg/L)
	concentration in Colby Lake	C_cl =	8.01990 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case		Year 1	
Parameter		Manganese	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.1500 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.1500 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.1500 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.1500 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.1500 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.1500 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.1500 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.1500 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.1500 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0086 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.1240 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.1240 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.1240 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.1240 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.1240 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.1240 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.1240 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.1240 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0378 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.7500 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.7500 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.7500 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.3162 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.1604 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.1160 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0378 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.7500 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.7500 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.7500 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.3162 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.1604 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	0.1604 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.1240 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.1240 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.1240 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.1656 (mg/L)
		Average Flow	
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	19.18914 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.63166 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.24338 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	22.46079 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	1.26107 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	6.86097 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.37854 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00007 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00003 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	25.26311 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	1.13303 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00003 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00001 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00007 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.34711 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.08583 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00005 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00010 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00035 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	101.39391 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	4.88330 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.07469 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	0.16125 (mg/s)
	mass flux of surface water into SW-005	M_s5 =	153.35547 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	7.96588 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	16.46943 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	1.64932 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	100.01220 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	4.10576 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	1.65555 (mg/s)
		Average Flow	
Mass balance at each node	mass flux in river at SW-001	M_r1 =	20.0642 (mg/s)
	mass flux in river at SW-002	M_r2 =	43.7860 (mg/s)
	mass flux in river at SW-003	M_r3 =	51.0266 (mg/s)
	mass flux in river at SW-004	M_r4 =	77.8553 (mg/s)
	mass flux in river at SW-004A	M_r4A =	154.3685 (mg/s)
	mass flux in river at SW-005	M_r5 =	345.6898 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	363.8086 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	469.5821 (mg/s)
			Average Flow
	concentration in river at SW-001	C_r1 =	0.12437 (mg/L)
	concentration in river at SW-002	C_r2 =	0.13631 (mg/L)
	concentration in river at SW-003	C_r3 =	0.13790 (mg/L)
	concentration in river at SW-004	C_r4 =	0.14148 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.14548 (mg/L)
	concentration in river at SW-005	C_r5 =	0.14686 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.14688 (mg/L)
	concentration in Colby Lake	C_cl =	0.14730 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case	Year 1		
Parameter	Sodium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	2.5000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	2.5000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	2.5000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	2.5000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	2.5000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	2.5000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	2.5000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	2.5000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	2.5000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	4.8000 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	13.3300 (mg/L)
	concentration of ground water into SW-002	C_g2 =	13.3300 (mg/L)
	concentration of ground water into SW-003	C_g3 =	13.3300 (mg/L)
	concentration of ground water into SW-004	C_g4 =	13.3300 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	13.3300 (mg/L)
	concentration of ground water into SW-005	C_g5 =	13.3300 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	13.3300 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	13.3300 (mg/L)
	concentration of ground water seepage from East Pit	C_ggp =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	25.8484 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	213.6722 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	286.4367 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	116.1683 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	1.9317 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	4.6000 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	7.1900 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	25.8484 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	213.6722 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	286.4367 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	116.1683 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	1.9317 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	4.6000 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	4.6000 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	13.3300 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	13.3300 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	13.3300 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	34.9869 (mg/L)
Convert concentration to mass flux	Average Flow		
	mass flux of surface water into SW-001	M_s1 =	319.81898 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	67.90302 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	135.84000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	374.34650 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	135.56455 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	114.34946 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	40.69346 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.01919 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.01006 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00017 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	421.05187 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	121.80096 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.01006 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00106 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00042 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	9.95502 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00022 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00008 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	2.46151 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00507 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.01087 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.07492 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	1,689.89851 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	524.95529 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00057 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	4.62957 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	4.62466 (mg/s)
	mass flux of surface water into SW-005	M_s5 =	2,555.92455 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	856.33253 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	274.49044 (mg/s)
mass flux of ground water into USGS Gage	M_g6 =	177.30233 (mg/s)	
mass flux of surface water into Colby Lake	M_scl =	1,666.87000 (mg/s)	
mass flux of ground water into Colby Lake	M_gcl =	441.36963 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M_shl =	27.59250 (mg/s)	
Mass balance at each node	Average Flow		
	mass flux in river at SW-001	M_r1 =	523.5620 (mg/s)
	mass flux in river at SW-002	M_r2 =	1,033.4731 (mg/s)
	mass flux in river at SW-003	M_r3 =	1,188.5454 (mg/s)
	mass flux in river at SW-004	M_r4 =	1,743.9176 (mg/s)
	mass flux in river at SW-004A	M_r4A =	3,968.0262 (mg/s)
	mass flux in river at SW-005	M_r5 =	7,380.2833 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	7,832.0761 (mg/s)
	mass flux into Colby Lake	M_cl =	9,967.9082 (mg/s)
Convert mass flux to concentration	Average Flow		
	concentration in river at SW-001	C_r1 =	3.24546 (mg/L)
	concentration in river at SW-002	C_r2 =	3.21724 (mg/L)
	concentration in river at SW-003	C_r3 =	3.21209 (mg/L)
	concentration in river at SW-004	C_r4 =	3.16912 (mg/L)
	concentration in river at SW-004A	C_r4A =	3.13115 (mg/L)
	concentration in river at SW-005	C_r5 =	3.13536 (mg/L)
	concentration in river at USGS Gage	C_r6 =	3.16194 (mg/L)
concentration in Colby Lake	C_cl =	3.12682 (mg/L)	

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case	Year 1			
Parameter	Nickel			
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0016 (mg/L)	
	concentration of surface water into SW-002	C_s2 =	0.0016 (mg/L)	
	concentration of surface water into SW-003	C_s3 =	0.0016 (mg/L)	
	concentration of surface water into SW-004	C_s4 =	0.0016 (mg/L)	
	concentration of surface water into SW-004A	C_s4A =	0.0016 (mg/L)	
	concentration of surface water into SW-005	C_s5 =	0.0016 (mg/L)	
	concentration of surface water into USGS Gage	C_s6 =	0.0016 (mg/L)	
	concentration of surface water into Colby Lake	C_scl =	0.0016 (mg/L)	
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0033 (mg/L)	
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0016 (mg/L)	
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)	
	concentration of ground water into SW-001	C_g1 =	0.0163 (mg/L)	
	concentration of ground water into SW-002	C_g2 =	0.0163 (mg/L)	
	concentration of ground water into SW-003	C_g3 =	0.0163 (mg/L)	
	concentration of ground water into SW-004	C_g4 =	0.0163 (mg/L)	
	concentration of ground water into SW-004A	C_g4A =	0.0163 (mg/L)	
	concentration of ground water into SW-005	C_g5 =	0.0163 (mg/L)	
	concentration of ground water into USGS Gage	C_g6 =	0.0163 (mg/L)	
	concentration of ground water into Colby Lake	C_gcl =	0.0163 (mg/L)	
	concentration of ground water seepage from East Pit	C_ggp =	#N/A (mg/L)	
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)	
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0163 (mg/L)	
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.8600 (mg/L)	
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.8600 (mg/L)	
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.8600 (mg/L)	
	concentration of liner leakage from LOSP	C_gC4LO =	1.6004 (mg/L)	
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0080 (mg/L)	
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.0190 (mg/L)	
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0163 (mg/L)	
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.8600 (mg/L)	
	concentration of liner leakage from Cat 3LO sumps	C_g3LOs =	0.8600 (mg/L)	
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.8600 (mg/L)	
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	1.6004 (mg/L)	
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0080 (mg/L)	
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	0.0080 (mg/L)	
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0163 (mg/L)	
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0163 (mg/L)	
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0163 (mg/L)	
	concentration of liner leakage from WWTF ponc	C_gWTFp =	0.5201 (mg/L)	
			Average Flow	
	Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	0.19957 (mg/s)
mass flux of ground water into SW-001		M_g1 =	0.08293 (mg/s)	
mass flux of surface discharges from upstream of PM-1		M_sns =	0.04387 (mg/s)	
mass flux of surface water into SW-002		M_s2 =	0.23359 (mg/s)	
mass flux of ground water into SW-002		M_g2 =	0.16557 (mg/s)	
mass flux of surface water into SW-003		M_s3 =	0.07135 (mg/s)	
mass flux of ground water into SW-003		M_g3 =	0.04970 (mg/s)	
mass flux of seepage from East Pit to SW-003		M_gep_003 =	#N/A (mg/s)	
mass flux of liner leakage from Cat 2/3 stockpile to SW-003		M_gC3_003 =	0.00008 (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-003		M_gC3LO_00 =	0.00003 (mg/s)	
mass flux of liner leakage from Cat 2/3 sumps to SW-003		M_gC3s_003 =	0.00000 (mg/s)	
mass flux of surface water into SW-004		M_s4 =	0.26274 (mg/s)	
mass flux of ground water into SW-004		M_g4 =	0.14876 (mg/s)	
mass flux of seepage from East Pit to SW-004		M_gep_004 =	#N/A (mg/s)	
mass flux of seepage from West Pit		M_gwp =	#N/A (mg/s)	
mass flux of liner leakage from Cat 2/3 stockpile to SW-004		M_gC3_004 =	- (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-004		M_gC3LO_00 =	0.00003 (mg/s)	
mass flux of liner leakage from Cat 4 stockpile		M_gC4 =	0.00001 (mg/s)	
mass flux of liner leakage from LOSP		M_gC4LO =	0.00034 (mg/s)	
mass flux of seepage from Overburden (Storage)		M_gOS =	0.01725 (mg/s)	
mass flux of liner leakage from Cat 3LO sumps to SW-004		M_gC3LOs_0 =	0.00000 (mg/s)	
mass flux of liner leakage from Cat 4 sumps		M_gC4s =	0.00000 (mg/s)	
mass flux of liner leakage from LOSP sumps		M_gC4LOs =	0.00000 (mg/s)	
mass flux of seepage from Overburden Ponds - PW1		M_gOp1 =	0.00426 (mg/s)	
mass flux of leakage from Haul Road Pond - PW2		M_gHRp2 =	0.00001 (mg/s)	
mass flux of leakage from Haul Road Pond - PW4		M_gHRp4 =	0.00001 (mg/s)	
mass flux of leakage from RTH Pond - PW3		M_gRTHp =	0.00000 (mg/s)	
mass flux of liner leakage from WWTF pond		M_gWTFp =	0.00111 (mg/s)	
mass flux of surface water into SW-004A		M_s4A =	1.05450 (mg/s)	
mass flux of ground water into SW-004A		M_g4A =	0.64113 (mg/s)	
mass flux of West Pit overflow		M_sms =	#N/A (mg/s)	
mass flux of liner leakage from Cat 1 stockpile		M_gC12 =	- (mg/s)	
mass flux of liner leakage from Cat 1 sumps		M_gC12s =	0.00000 (mg/s)	
mass flux of seepage from Overburden (Cat 1)		M_gO12 =	0.01223 (mg/s)	
mass flux of seepage from Overburden Pond - PW7		M_gOp7 =	0.00801 (mg/s)	
mass flux of surface water into SW-005		M_s5 =	1.59490 (mg/s)	
mass flux of ground water into SW-005		M_g5 =	1.04584 (mg/s)	
mass flux of surface water into USGS Gage		M_s6 =	0.17128 (mg/s)	
mass flux of ground water into USGS Gage		M_g6 =	0.21654 (mg/s)	
mass flux of surface water into Colby Lake		M_scl =	1.04013 (mg/s)	
mass flux of ground water into Colby Lake		M_gcl =	0.53905 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP		M_shl =	0.03642 (mg/s)	
Mass balance at each node	mass flux in river at SW-001	M_r1 =	0.3264 (mg/s)	
	mass flux in river at SW-002	M_r2 =	0.7255 (mg/s)	
	mass flux in river at SW-003	M_r3 =	0.8467 (mg/s)	
	mass flux in river at SW-004	M_r4 =	1.2812 (mg/s)	
	mass flux in river at SW-004A	M_r4A =	2.9971 (mg/s)	
	mass flux in river at SW-005	M_r5 =	5.6378 (mg/s)	
	mass flux in river at USGS Gage	M_r6 =	6.0256 (mg/s)	
mass flux into Colby Lake	M_cl =	7.6412 (mg/s)		
		Average Flow		
Convert mass flux to concentration	concentration in river at SW-001	C_r1 =	0.00202 (mg/L)	
	concentration in river at SW-002	C_r2 =	0.00226 (mg/L)	
	concentration in river at SW-003	C_r3 =	0.00229 (mg/L)	
	concentration in river at SW-004	C_r4 =	0.00233 (mg/L)	
	concentration in river at SW-004A	C_r4A =	0.00236 (mg/L)	
	concentration in river at SW-005	C_r5 =	0.00240 (mg/L)	
	concentration in river at USGS Gage	C_r6 =	0.00243 (mg/L)	
	concentration in Colby Lake	C_cl =	0.00240 (mg/L)	



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case	Year 1		
Parameter	Lead		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0005 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0005 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0005 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0005 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0005 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0005 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0005 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0005 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0005 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0002 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0011 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0011 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0011 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0011 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0011 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0011 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0011 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0011 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.0020 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.0078 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0105 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0163 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.0027 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0007 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.0020 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.0078 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.0105 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0163 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0027 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0007 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	0.0007 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0011 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0011 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0011 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0029 (mg/L)
			Average Flow
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	0.06396 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.00571 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.00425 (mg/s)
	mass flux of surface water into SW-002	M s2 =	0.07487 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.01139 (mg/s)
	mass flux of surface water into SW-003	M s3 =	0.02287 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.00342 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep 003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO 00 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	0.08421 (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.01023 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep 004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO 00 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.00146 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs 0 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.00036 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00001 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	0.33798 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.04411 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	0.00068 (mg/s)
	mass flux of surface water into SW-005	M s5 =	0.51118 (mg/s)
	mass flux of ground water into SW-005	M g5 =	0.07195 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	0.05490 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.01490 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	0.33337 (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	0.03708 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.00552 (mg/s)
			Average Flow
Mass balance at each node	mass flux in river at SW-001	M r1 =	0.0739 (mg/s)
	mass flux in river at SW-002	M r2 =	0.1602 (mg/s)
	mass flux in river at SW-003	M r3 =	0.1865 (mg/s)
	mass flux in river at SW-004	M r4 =	0.2827 (mg/s)
	mass flux in river at SW-004A	M r4A =	0.6655 (mg/s)
	mass flux in river at SW-005	M r5 =	1.2486 (mg/s)
	mass flux in river at USGS Gage	M r6 =	1.3184 (mg/s)
mass flux into Colby Lake	M cl =	1.6944 (mg/s)	
			Average Flow
Convert mass flux to concentration	concentration in river at SW-001	C r1 =	0.00046 (mg/L)
	concentration in river at SW-002	C r2 =	0.00050 (mg/L)
	concentration in river at SW-003	C r3 =	0.00050 (mg/L)
	concentration in river at SW-004	C r4 =	0.00051 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00053 (mg/L)
	concentration in river at SW-005	C r5 =	0.00053 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00053 (mg/L)
	concentration in Colby Lake	C cl =	0.00053 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case	Year 1		
Parameter	Antimony		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0015 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0015 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0015 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0015 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0015 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0015 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0015 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0015 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0015 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0015 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0015 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0015 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0015 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0015 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0015 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0015 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0015 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0015 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.0704 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.0800 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0800 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0800 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.0009 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0003 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.0004 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.0704 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.0800 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.0800 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0800 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0009 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0003 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	0.0003 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0015 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0015 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0015 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	0.0301 (mg/L)
		Average Flow	
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	0.19189 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.00764 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.04245 (mg/s)
	mass flux of surface water into SW-002	M s2 =	0.22461 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.01525 (mg/s)
	mass flux of surface water into SW-003	M s3 =	0.06861 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.00458 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep 003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3 003 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO 00 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s 003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	0.25263 (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.01371 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep 004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3 004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO 00 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.00065 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs 0 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.00016 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00006 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	1.01394 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.05907 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	0.00026 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	0.00030 (mg/s)
	mass flux of surface water into SW-005	M s5 =	1.53355 (mg/s)
	mass flux of ground water into SW-005	M g5 =	0.09636 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	0.16469 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.01995 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	1.00012 (mg/s)
mass flux of ground water into Colby Lake	M gcl =	0.04967 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.01656 (mg/s)	
Mass balance at each node	Average Flow		
	mass flux in river at SW-001	M r1 =	0.2420 (mg/s)
	mass flux in river at SW-002	M r2 =	0.4818 (mg/s)
	mass flux in river at SW-003	M r3 =	0.5560 (mg/s)
	mass flux in river at SW-004	M r4 =	0.8223 (mg/s)
	mass flux in river at SW-004A	M r4A =	1.8958 (mg/s)
	mass flux in river at SW-005	M r5 =	3.5257 (mg/s)
	mass flux in river at USGS Gage	M r6 =	3.7104 (mg/s)
	mass flux into Colby Lake	M cl =	4.7767 (mg/s)
Convert mass flux to concentration	Average Flow		
	concentration in river at SW-001	C r1 =	0.00150 (mg/L)
	concentration in river at SW-002	C r2 =	0.00150 (mg/L)
	concentration in river at SW-003	C r3 =	0.00150 (mg/L)
	concentration in river at SW-004	C r4 =	0.00149 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00150 (mg/L)
	concentration in river at SW-005	C r5 =	0.00150 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00150 (mg/L)
	concentration in Colby Lake	C cl =	0.00150 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case		Year 1	
Parameter		Selenium	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0005 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0005 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0005 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0005 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0005 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0005 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0005 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0005 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0005 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0005 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0019 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0019 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0019 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0019 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0019 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0019 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0019 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0019 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0029 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0029 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0029 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0029 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0020 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0004 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.0019 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0029 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0029 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0029 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0029 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0020 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0004 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	0.0004 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0019 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0019 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0019 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0023 (mg/L)
		Average Flow	
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	0.06396 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00973 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.01415 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	0.07487 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.01942 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.02287 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00583 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.08421 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.01745 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00096 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00024 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00000 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	0.33798 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.07522 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.00122 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	0.00045 (mg/s)
	mass flux of surface water into SW-005	M_s5 =	0.51118 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.12270 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.05490 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.02540 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	0.33337 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.06324 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00552 (mg/s)
		Average Flow	
Mass balance at each node	mass flux in river at SW-001	M_r1 =	0.0878 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.1821 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.2108 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.3137 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.7286 (mg/s)
	mass flux in river at SW-005	M_r5 =	1.3625 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	1.4428 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	1.8449 (mg/s)
			Average Flow
	concentration in river at SW-001	C_r1 =	0.00054 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00057 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00057 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00057 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00057 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00058 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00058 (mg/L)
	concentration in Colby Lake	C_cl =	0.00058 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case	Year 1		
Parameter	Sulfate		
Input concentration data	concentration of surface water into SW-001	C_s1 =	9.0000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	9.0000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	9.0000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	9.0000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	9.0000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	9.0000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	9.0000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	9.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	9.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	22.0000 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	16.1300 (mg/L)
	concentration of ground water into SW-002	C_g2 =	16.1300 (mg/L)
	concentration of ground water into SW-003	C_g3 =	16.1300 (mg/L)
	concentration of ground water into SW-004	C_g4 =	16.1300 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	16.1300 (mg/L)
	concentration of ground water into SW-005	C_g5 =	16.1300 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	16.1300 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	16.1300 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	63.2051 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	1,261.5692 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	1,691.1871 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	2,340.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	197.5857 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	35.1700 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	68.3000 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	63.2051 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	1,261.5692 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	1,691.1871 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	2,340.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	197.5857 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	35.1700 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	35.1700 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	16.1300 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	16.1300 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	16.1300 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	202.2758 (mg/L)
		Average Flow	
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	1,151.34833 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	82.16622 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	622.60000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	1,347.64742 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	164.04022 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	411.65804 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	49.24122 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.11332 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.05939 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00102 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	1,515.78674 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	147.38556 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.05939 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.02132 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.04251 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	76.11262 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00130 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00164 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00026 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	18.81988 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00614 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.01315 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.43312 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	6,083.63462 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	635.22346 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00139 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	43.97767 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	35.35856 (mg/s)
	mass flux of surface water into SW-005	M_s5 =	9,201.32837 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	1,036.20733 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	988.16557 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	214.54513 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	6,000.73200 (mg/s)
mass flux of ground water into Colby Lake	M_gcl =	534.08043 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M_shl =	99.33300 (mg/s)	
		Average Flow	
Mass balance at each node	mass flux in river at SW-001	M_r1 =	1,856.1145 (mg/s)
	mass flux in river at SW-002	M_r2 =	3,367.8022 (mg/s)
	mass flux in river at SW-003	M_r3 =	3,828.8752 (mg/s)
	mass flux in river at SW-004	M_r4 =	5,587.5598 (mg/s)
	mass flux in river at SW-004A	M_r4A =	12,385.7555 (mg/s)
	mass flux in river at SW-005	M_r5 =	22,623.2912 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	23,826.0019 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	30,460.1474 (mg/s)
	concentration in river at SW-001	C_r1 =	11.50568 (mg/L)
	concentration in river at SW-002	C_r2 =	10.48408 (mg/L)
	concentration in river at SW-003	C_r3 =	10.34767 (mg/L)
	concentration in river at SW-004	C_r4 =	10.15396 (mg/L)
	concentration in river at SW-004A	C_r4A =	9.77354 (mg/L)
	concentration in river at SW-005	C_r5 =	9.61104 (mg/L)
	concentration in river at USGS Gage	C_r6 =	9.61897 (mg/L)
	concentration in Colby Lake	C_cl =	9.55499 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case	Year 1		
Parameter	Thallium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0004 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0004 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0004 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0004 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0004 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0004 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0004 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0004 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0004 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0003 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0000 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0000 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0000 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0000 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0000 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0000 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0000 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0000 (mg/L)
	concentration of ground water seepage from East Pit	C_gwp =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0000 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0000 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0000 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0000 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	0.0000 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0000 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0000 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0000 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0009 (mg/L)

Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	0.05117 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00002 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.00809 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	0.05990 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.00004 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.01830 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00001 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.06737 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.00004 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00009 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00002 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00000 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	0.27038 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.00016 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	0.00004 (mg/s)
	mass flux of surface water into SW-005	M_s5 =	0.40895 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.00026 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.04392 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.00005 (mg/s)
mass flux of surface water into Colby Lake	M_scl =	0.26670 (mg/s)	
mass flux of ground water into Colby Lake	M_gcl =	0.00013 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00441 (mg/s)	

Mass balance at each node	mass flux in river at SW-001	M_r1 =	0.0593 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.1192 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.1375 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.2050 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.4756 (mg/s)
	mass flux in river at SW-005	M_r5 =	0.8848 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	0.9288 (mg/s)
mass flux into Colby Lake	M_cl =	1.2000 (mg/s)	

Convert mass flux to concentration	concentration in river at SW-001	C_r1 =	0.00037 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00037 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00037 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00037 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00038 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00038 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00037 (mg/L)
	concentration in Colby Lake	C_cl =	0.00038 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case	Year 1			
Parameter	Vanadium			
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0009 (mg/L)	
	concentration of surface water into SW-002	C_s2 =	0.0009 (mg/L)	
	concentration of surface water into SW-003	C_s3 =	0.0009 (mg/L)	
	concentration of surface water into SW-004	C_s4 =	0.0009 (mg/L)	
	concentration of surface water into SW-004A	C_s4A =	0.0009 (mg/L)	
	concentration of surface water into SW-005	C_s5 =	0.0009 (mg/L)	
	concentration of surface water into USGS Gage	C_s6 =	0.0009 (mg/L)	
	concentration of surface water into Colby Lake	C_scl =	0.0009 (mg/L)	
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0009 (mg/L)	
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0043 (mg/L)	
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)	
	concentration of ground water into SW-001	C_g1 =	0.0043 (mg/L)	
	concentration of ground water into SW-002	C_g2 =	0.0043 (mg/L)	
	concentration of ground water into SW-003	C_g3 =	0.0043 (mg/L)	
	concentration of ground water into SW-004	C_g4 =	0.0043 (mg/L)	
	concentration of ground water into SW-004A	C_g4A =	0.0043 (mg/L)	
	concentration of ground water into SW-005	C_g5 =	0.0043 (mg/L)	
	concentration of ground water into USGS Gage	C_g6 =	0.0043 (mg/L)	
	concentration of ground water into Colby Lake	C_gcl =	0.0043 (mg/L)	
	concentration of ground water seepage from East Pit	C_ggp =	#N/A (mg/L)	
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)	
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0097 (mg/L)	
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.3813 (mg/L)	
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.5111 (mg/L)	
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0456 (mg/L)	
	concentration of liner leakage from LOSP	C_gC4LO =	0.0005 (mg/L)	
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0017 (mg/L)	
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.0014 (mg/L)	
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0097 (mg/L)	
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.3813 (mg/L)	
	concentration of liner leakage from Cat 3LO sumps	C_g3LOs =	0.5111 (mg/L)	
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0456 (mg/L)	
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0005 (mg/L)	
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0017 (mg/L)	
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	0.0017 (mg/L)	
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0043 (mg/L)	
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0043 (mg/L)	
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0043 (mg/L)	
	concentration of liner leakage from WWTF ponc	C_gWTFp =	0.0411 (mg/L)	
			Average Flow	
	Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	0.11513 (mg/s)
mass flux of ground water into SW-001		M_g1 =	0.12190 (mg/s)	
mass flux of surface discharges from upstream of PM-1		M_sns =	0.12169 (mg/s)	
mass flux of surface water into SW-002		M_s2 =	0.13476 (mg/s)	
mass flux of ground water into SW-002		M_g2 =	0.04373 (mg/s)	
mass flux of surface water into SW-003		M_s3 =	0.04117 (mg/s)	
mass flux of ground water into SW-003		M_g3 =	0.01313 (mg/s)	
mass flux of seepage from East Pit to SW-003		M_ggp_003 =	#N/A (mg/s)	
mass flux of liner leakage from Cat 2/3 stockpile to SW-003		M_gC3_003 =	0.00003 (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-003		M_gC3LO_00 =	0.00002 (mg/s)	
mass flux of liner leakage from Cat 2/3 sumps to SW-003		M_gC3s_003 =	0.00000 (mg/s)	
mass flux of surface water into SW-004		M_s4 =	0.15158 (mg/s)	
mass flux of ground water into SW-004		M_g4 =	0.03929 (mg/s)	
mass flux of seepage from East Pit to SW-004		M_ggp_004 =	#N/A (mg/s)	
mass flux of seepage from West Pit		M_gwp =	#N/A (mg/s)	
mass flux of liner leakage from Cat 2/3 stockpile to SW-004		M_gC3_004 =	- (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-004		M_gC3LO_00 =	0.00002 (mg/s)	
mass flux of liner leakage from Cat 4 stockpile		M_gC4 =	0.00000 (mg/s)	
mass flux of liner leakage from LOSP		M_gC4LO =	0.00000 (mg/s)	
mass flux of seepage from Overburden (Storage)		M_gOS =	0.00374 (mg/s)	
mass flux of liner leakage from Cat 3LO sumps to SW-004		M_gC3LOs_0 =	0.00000 (mg/s)	
mass flux of liner leakage from Cat 4 sumps		M_gC4s =	0.00000 (mg/s)	
mass flux of liner leakage from LOSP sumps		M_gC4LOs =	0.00000 (mg/s)	
mass flux of seepage from Overburden Ponds - PW1		M_gOp1 =	0.00093 (mg/s)	
mass flux of leakage from Haul Road Pond - PW2		M_gHRp2 =	0.00000 (mg/s)	
mass flux of leakage from Haul Road Pond - PW4		M_gHRp4 =	0.00000 (mg/s)	
mass flux of leakage from RTH Pond - PW3		M_gRTHp =	0.00000 (mg/s)	
mass flux of liner leakage from WWTF pond		M_gWTFp =	0.00009 (mg/s)	
mass flux of surface water into SW-004A		M_s4A =	0.60836 (mg/s)	
mass flux of ground water into SW-004A		M_g4A =	0.16934 (mg/s)	
mass flux of West Pit overflow		M_sms =	#N/A (mg/s)	
mass flux of liner leakage from Cat 1 stockpile		M_gC12 =	- (mg/s)	
mass flux of liner leakage from Cat 1 sumps		M_gC12s =	0.00000 (mg/s)	
mass flux of seepage from Overburden (Cat 1)		M_gO12 =	0.00090 (mg/s)	
mass flux of seepage from Overburden Pond - PW7		M_gOp7 =	0.00174 (mg/s)	
mass flux of surface water into SW-005		M_s5 =	0.92013 (mg/s)	
mass flux of ground water into SW-005		M_g5 =	0.27624 (mg/s)	
mass flux of surface water into USGS Gage		M_s6 =	0.09882 (mg/s)	
mass flux of ground water into USGS Gage		M_g6 =	0.05719 (mg/s)	
mass flux of surface water into Colby Lake		M_scl =	0.60007 (mg/s)	
mass flux of ground water into Colby Lake		M_gcl =	0.14238 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP		M_shl =	0.00993 (mg/s)	
		Average Flow		
Mass balance at each node	mass flux in river at SW-001	M_r1 =	0.2587 (mg/s)	
	mass flux in river at SW-002	M_r2 =	0.4372 (mg/s)	
	mass flux in river at SW-003	M_r3 =	0.4916 (mg/s)	
	mass flux in river at SW-004	M_r4 =	0.6872 (mg/s)	
	mass flux in river at SW-004A	M_r4A =	1.4676 (mg/s)	
	mass flux in river at SW-005	M_r5 =	2.6639 (mg/s)	
	mass flux in river at USGS Gage	M_r6 =	2.8199 (mg/s)	
mass flux into Colby Lake	M_cl =	3.5723 (mg/s)		
		Average Flow		
Convert mass flux to concentration	concentration in river at SW-001	C_r1 =	0.00160 (mg/L)	
	concentration in river at SW-002	C_r2 =	0.00136 (mg/L)	
	concentration in river at SW-003	C_r3 =	0.00133 (mg/L)	
	concentration in river at SW-004	C_r4 =	0.00125 (mg/L)	
	concentration in river at SW-004A	C_r4A =	0.00116 (mg/L)	
	concentration in river at SW-005	C_r5 =	0.00113 (mg/L)	
	concentration in river at USGS Gage	C_r6 =	0.00114 (mg/L)	
concentration in Colby Lake	C_cl =	0.00112 (mg/L)		



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case	Year 1			
Parameter	Zinc			
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0160 (mg/L)	
	concentration of surface water into SW-002	C s2 =	0.0160 (mg/L)	
	concentration of surface water into SW-003	C s3 =	0.0160 (mg/L)	
	concentration of surface water into SW-004	C s4 =	0.0160 (mg/L)	
	concentration of surface water into SW-004A	C s4A =	0.0160 (mg/L)	
	concentration of surface water into SW-005	C s5 =	0.0160 (mg/L)	
	concentration of surface water into USGS Gage	C s6 =	0.0160 (mg/L)	
	concentration of surface water into Colby Lake	C scl =	0.0160 (mg/L)	
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0620 (mg/L)	
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0073 (mg/L)	
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)	
	concentration of ground water into SW-001	C g1 =	0.0275 (mg/L)	
	concentration of ground water into SW-002	C g2 =	0.0275 (mg/L)	
	concentration of ground water into SW-003	C g3 =	0.0275 (mg/L)	
	concentration of ground water into SW-004	C g4 =	0.0275 (mg/L)	
	concentration of ground water into SW-004A	C g4A =	0.0275 (mg/L)	
	concentration of ground water into SW-005	C g5 =	0.0275 (mg/L)	
	concentration of ground water into USGS Gage	C g6 =	0.0275 (mg/L)	
	concentration of ground water into Colby Lake	C gcl =	0.0275 (mg/L)	
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)	
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)	
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.0571 (mg/L)	
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.0900 (mg/L)	
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0900 (mg/L)	
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0900 (mg/L)	
	concentration of liner leakage from LOSP	C gC4LO =	2.2915 (mg/L)	
	concentration of seepage from Overburden (Storage)	C gOS =	0.0046 (mg/L)	
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.0030 (mg/L)	
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.0571 (mg/L)	
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.0900 (mg/L)	
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.0900 (mg/L)	
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0900 (mg/L)	
	concentration of liner leakage from LOSP sumps	C gC4LOs =	2.2915 (mg/L)	
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0046 (mg/L)	
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	0.0046 (mg/L)	
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0275 (mg/L)	
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0275 (mg/L)	
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0275 (mg/L)	
	concentration of liner leakage from WWTF pond	C gWTFp =	0.5679 (mg/L)	
			Average Flow	
	Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	2.04684 (mg/s)
mass flux of ground water into SW-001		M g1 =	0.14009 (mg/s)	
mass flux of surface discharges from upstream of PM-1		M sns =	0.20744 (mg/s)	
mass flux of surface water into SW-002		M s2 =	2.39582 (mg/s)	
mass flux of ground water into SW-002		M g2 =	0.27967 (mg/s)	
mass flux of surface water into SW-003		M s3 =	0.73184 (mg/s)	
mass flux of ground water into SW-003		M g3 =	0.08395 (mg/s)	
mass flux of seepage from East Pit to SW-003		M gep_003 =	#N/A (mg/s)	
mass flux of liner leakage from Cat 2/3 stockpile to SW-003		M gC3_003 =	0.00001 (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-003		M gC3LO_00 =	0.00000 (mg/s)	
mass flux of liner leakage from Cat 2/3 sumps to SW-003		M gC3s_003 =	0.00000 (mg/s)	
mass flux of surface water into SW-004		M s4 =	2.69473 (mg/s)	
mass flux of ground water into SW-004		M g4 =	0.25128 (mg/s)	
mass flux of seepage from East Pit to SW-004		M gep_004 =	#N/A (mg/s)	
mass flux of seepage from West Pit		M gwp =	#N/A (mg/s)	
mass flux of liner leakage from Cat 2/3 stockpile to SW-004		M gC3_004 =	- (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-004		M gC3LO_00 =	0.00000 (mg/s)	
mass flux of liner leakage from Cat 4 stockpile		M gC4 =	0.00000 (mg/s)	
mass flux of liner leakage from LOSP		M gC4LO =	0.00049 (mg/s)	
mass flux of seepage from Overburden (Storage)		M gOS =	0.00987 (mg/s)	
mass flux of liner leakage from Cat 3LO sumps to SW-004		M gC3LOs_0 =	0.00000 (mg/s)	
mass flux of liner leakage from Cat 4 sumps		M gC4s =	0.00000 (mg/s)	
mass flux of liner leakage from LOSP sumps		M gC4LOs =	0.00000 (mg/s)	
mass flux of seepage from Overburden Ponds - PW1		M gOp1 =	0.00244 (mg/s)	
mass flux of leakage from Haul Road Pond - PW2		M gHRp2 =	0.00001 (mg/s)	
mass flux of leakage from Haul Road Pond - PW4		M gHRp4 =	0.00002 (mg/s)	
mass flux of leakage from RTH Pond - PW3		M gRTHp =	0.00000 (mg/s)	
mass flux of liner leakage from WWTF pond		M gWTFp =	0.00122 (mg/s)	
mass flux of surface water into SW-004A		M s4A =	10.81535 (mg/s)	
mass flux of ground water into SW-004A		M g4A =	1.08299 (mg/s)	
mass flux of West Pit overflow		M sms =	#N/A (mg/s)	
mass flux of liner leakage from Cat 1 stockpile		M gC12 =	- (mg/s)	
mass flux of liner leakage from Cat 1 sumps		M gC12s =	0.00000 (mg/s)	
mass flux of seepage from Overburden (Cat 1)		M gO12 =	0.00193 (mg/s)	
mass flux of seepage from Overburden Pond - PW7		M gOp7 =	0.00458 (mg/s)	
mass flux of surface water into SW-005		M s5 =	16.35792 (mg/s)	
mass flux of ground water into SW-005		M g5 =	1.76663 (mg/s)	
mass flux of surface water into USGS Gage		M s6 =	1.75674 (mg/s)	
mass flux of ground water into USGS Gage		M g6 =	0.36578 (mg/s)	
mass flux of surface water into Colby Lake		M scl =	10.66797 (mg/s)	
mass flux of ground water into Colby Lake		M gcl =	0.91055 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP		M shl =	0.68429 (mg/s)	
		Average Flow		
Mass balance at each node	mass flux in river at SW-001	M r1 =	2.3944 (mg/s)	
	mass flux in river at SW-002	M r2 =	5.0699 (mg/s)	
	mass flux in river at SW-003	M r3 =	5.8857 (mg/s)	
	mass flux in river at SW-004	M r4 =	8.8457 (mg/s)	
	mass flux in river at SW-004A	M r4A =	20.7506 (mg/s)	
	mass flux in river at SW-005	M r5 =	38.8751 (mg/s)	
	mass flux in river at USGS Gage	M r6 =	40.9976 (mg/s)	
Convert mass flux to concentration	mass flux into Colby Lake	M cl =	53.2605 (mg/s)	
		Average Flow		
Convert mass flux to concentration	concentration in river at SW-001	C r1 =	0.01484 (mg/L)	
	concentration in river at SW-002	C r2 =	0.01578 (mg/L)	
	concentration in river at SW-003	C r3 =	0.01591 (mg/L)	
	concentration in river at SW-004	C r4 =	0.01607 (mg/L)	
	concentration in river at SW-004A	C r4A =	0.01637 (mg/L)	
	concentration in river at SW-005	C r5 =	0.01652 (mg/L)	
	concentration in river at USGS Gage	C r6 =	0.01655 (mg/L)	
	concentration in Colby Lake	C cl =	0.01671 (mg/L)	



## Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

### FLOWS

Case Flow	Year 1 High Flow Conditions (10-yr, 24-hr rainfall event)			
Total flow in Partridge River	flow in river at SW-001	Q_r1_H =	85.35	(cfs)
	flow in river at SW-002	Q_r2_H =	173.72	(cfs)
	flow in river at SW-003	Q_r3_H =	230.75	(cfs)
	flow in river at SW-004	Q_r4_H =	289.88	(cfs)
	flow in river at SW-004A	Q_r4a_H =	941.24	(cfs)
	flow in river at SW-005	Q_r5_H =	1,098.06	(cfs)
	flow in river at USGS Gage	Q_r6_H =	1,098.80	(cfs)
	total flow into Colby Lake	Q_cl_H =	1,436.33	(cfs)
	flow check	Q_ck_H =	1,436.33	(cfs)
Input flow data	surface water flow into SW-001	Q_s1_H =	84.17	(cfs)
	surface water flow into SW-002	Q_s2_H =	88.01	(cfs)
	surface water flow into SW-003	Q_s3_H =	56.92	(cfs)
	surface water flow into SW-004	Q_s4_H =	58.71	(cfs)
	surface water flow into SW-004A	Q_s4a_H =	649.86	(cfs)
	surface water flow into SW-005	Q_s5_H =	154.55	(cfs)
	surface water flow into USGS Gage	Q_s6_H =	0.27	(cfs)
	surface water flow into Colby Lake	Q_scl_H =	335.97	(cfs)
	surface water inflow from Hoyt Lakes WWTP	Q_shl_H =	0.39	(cfs)
	surface water inflow from discharges upstream of PM-1	Q_sns_H =	1.00	(cfs)
	surface water flow from West Pit overflow	Q_sms_H =	-	(cfs)
	ground water flow into SW-001	Q_g1_H =	0.18	(cfs)
	ground water flow into SW-002	Q_g2_H =	0.36	(cfs)
	ground water flow into SW-003	Q_g3_H =	0.11	(cfs)
	ground water flow into SW-004	Q_g4_H =	0.32	(cfs)
	ground water flow into SW-004A	Q_g4a_H =	1.39	(cfs)
	ground water flow into SW-005	Q_g5_H =	2.27	(cfs)
	ground water flow into USGS Gage	Q_g6_H =	0.47	(cfs)
	ground water flow into Colby Lake	Q_gcl_H =	1.17	(cfs)
	ground water seepage from East Pit to SW-003	Q_gep_003_H =	-	(cfs)
	ground water seepage from East Pit to SW-004	Q_gep_004_H =	-	(cfs)
	ground water seepage from West Pit	Q_gwp_H =	-	(cfs)
	ground water liner leakage from Cat 1 stockpile	Q_gC12_H =	-	(cfs)
	ground water liner leakage from Cat 2/3 stockpile to SW-003	Q_gC3_003_H =	0.0000	(cfs)
	ground water liner leakage from Cat 2/3 stockpile to SW-004	Q_gC3_004_H =	-	(cfs)
	ground water liner leakage from Cat 3LO stockpile to SW-003	Q_gC3LO_003_H =	0.0000	(cfs)
	ground water liner leakage from Cat 3LO stockpile to SW-004	Q_gC3LO_004_H =	0.0000	(cfs)
	ground water liner leakage from Cat 4 stockpile	Q_gC4_H =	0.0000	(cfs)
	ground water liner leakage from LOSP	Q_gC4LO_H =	0.0002	(cfs)
	ground water seepage from Overburden Storage	Q_gOS_H =	0.0765	(cfs)
	ground water seepage from Overburden (Cat 1)	Q_gO12_H =	0.0783	(cfs)
	ground water liner leakage from Cat 1 sumps	Q_gC12s_H =	0.0000	(cfs)
	ground water liner leakage from Cat 2/3 sumps	Q_gC3s_H =	0.0000	(cfs)
	ground water liner leakage from Cat 3LO sumps	Q_gC3LOs_H =	0.0000	(cfs)
	ground water liner leakage from Cat 4 sumps	Q_gC4s_H =	0.0000	(cfs)
	ground water liner leakage from LOSP sumps	Q_gC4LOs_H =	0.0000	(cfs)
	ground water seepage from Overburden pond - PW1	Q_gOp1_H =	0.0189	(cfs)
	ground water seepage from Overburden pond - PW7	Q_gOp7_H =	0.0355	(cfs)
	ground water leakage from Haul Road pond - PW2	Q_gHRp2_H =	0.0000	(cfs)
	ground water leakage from Haul Road pond - PW4	Q_gHRp4_H =	0.0000	(cfs)
	ground water leakage from RTH pond - PW3	Q_gRTHp_H =	0.0000	(cfs)
	ground water liner leakage from WWTF pond	Q_gWTFp_H =	0.000076	(cfs)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case	Year 1		
Parameter	Silver		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0001 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0001 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0001 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0001 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0001 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0001 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0001 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0001 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0001 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0001 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0006 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0006 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0006 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0006 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0006 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0006 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0006 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0006 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0007 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0007 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0007 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0007 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0001 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	- (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0007 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0007 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0007 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0007 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0001 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	- (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	- (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0006 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0006 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0006 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0007 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	0.23820 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00280 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.00340 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	0.24906 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.00559 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.16109 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00168 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.16616 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.00503 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	- (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00000 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	1.83910 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.02166 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	- (mg/s)
	mass flux of surface water into SW-005	M_s5 =	0.43737 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.03533 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.00078 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.00732 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	0.95080 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.01821 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00110 (mg/s)
Mass balance at each node	mass flux in river at SW-001	M_r1 =	0.2444 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.4991 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.6618 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.8330 (mg/s)
	mass flux in river at SW-004A	M_r4A =	2.6938 (mg/s)
	mass flux in river at SW-005	M_r5 =	3.1665 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	3.1746 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	4.1447 (mg/s)
	concentration in river at SW-001	C_r1 =	0.00010 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00010 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00010 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00010 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00010 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00010 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00010 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.00011 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 1 Aluminum		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0700 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0700 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0700 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0700 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0700 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0700 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0700 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0700 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0700 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0173 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.1250 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.1250 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.1250 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.1250 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.1250 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.1250 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.1250 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.1250 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	1.6800 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	1.6800 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	1.6800 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	1.6800 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	1.5620 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.4106 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.1400 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	1.6800 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	1.6800 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	1.6800 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	1.6800 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	1.5620 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.4106 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	0.4106 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.1250 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.1250 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.1250 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	1.1077 (mg/L)
Convert concentration to mass flux			High Flow
	mass flux of surface water into SW-001	M s1 =	166.74077 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.63675 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.48959 (mg/s)
	mass flux of surface water into SW-002	M s2 =	174.34190 (mg/s)
	mass flux of ground water into SW-002	M g2 =	1.27124 (mg/s)
	mass flux of surface water into SW-003	M s3 =	112.76331 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.38160 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep 003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3 003 =	0.00078 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO 003 =	0.00167 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s 003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	116.30988 (mg/s)
	mass flux of ground water into SW-004	M g4 =	1.14217 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep 004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3 004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO 004 =	0.00167 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00043 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00950 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.88859 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs 004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.21972 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00005 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00010 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00237 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	1,287.37284 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	4.92269 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00004 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	0.31024 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	0.41280 (mg/s)
	mass flux of surface water into SW-005	M s5 =	306.15626 (mg/s)
	mass flux of ground water into SW-005	M g5 =	8.03013 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	0.54378 (mg/s)
mass flux of ground water into USGS Gage	M g6 =	1.66263 (mg/s)	
mass flux of surface water into Colby Lake	M scl =	665.55657 (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	4.13888 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.77259 (mg/s)	
Mass balance at each node			High Flow
	mass flux in river at SW-001	M r1 =	167.8671 (mg/s)
	mass flux in river at SW-002	M r2 =	343.4802 (mg/s)
	mass flux in river at SW-003	M r3 =	456.6276 (mg/s)
	mass flux in river at SW-004	M r4 =	575.2019 (mg/s)
	mass flux in river at SW-004A	M r4A =	1,868.2205 (mg/s)
	mass flux in river at SW-005	M r5 =	2,182.4069 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M r6 =	2,184.6133 (mg/s)
	mass flux into Colby Lake	M cl =	2,855.0813 (mg/s)
			High Flow
	concentration in river at SW-001	C r1 =	0.06950 (mg/L)
	concentration in river at SW-002	C r2 =	0.06987 (mg/L)
	concentration in river at SW-003	C r3 =	0.06993 (mg/L)
	concentration in river at SW-004	C r4 =	0.07012 (mg/L)
	concentration in river at SW-004A	C r4A =	0.07014 (mg/L)
	concentration in river at SW-005	C r5 =	0.07023 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.07025 (mg/L)
	concentration in Colby Lake (H)	C cl =	0.07160 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 1 Arsenic		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0021 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0021 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0021 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0021 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0021 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0021 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0021 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0021 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0021 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0065 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0022 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0022 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0022 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0022 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0022 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0022 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0022 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0022 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.0115 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.7100 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.7100 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.3088 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.0016 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0016 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.0027 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.0115 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.7100 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.7100 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.3088 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0016 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0016 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	0.0016 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0022 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0022 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0022 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	0.0475 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	5.02604 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.01100 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.18395 (mg/s)
	mass flux of surface water into SW-002	M s2 =	5.25516 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.02197 (mg/s)
	mass flux of surface water into SW-003	M s3 =	3.39901 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.00659 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.00033 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00070 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	3.50591 (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.01974 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00070 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00008 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.00338 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.00083 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00010 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	38.80510 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.08506 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	0.00598 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	0.00157 (mg/s)
	mass flux of surface water into SW-005	M s5 =	9.22842 (mg/s)
	mass flux of ground water into SW-005	M g5 =	0.13876 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	0.01639 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.02873 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	20.06178 (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	0.07152 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.02329 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M r1 =	5.2210 (mg/s)
	mass flux in river at SW-002	M r2 =	10.4981 (mg/s)
	mass flux in river at SW-003	M r3 =	13.9048 (mg/s)
	mass flux in river at SW-004	M r4 =	17.4355 (mg/s)
	mass flux in river at SW-004A	M r4A =	56.3332 (mg/s)
	mass flux in river at SW-005	M r5 =	65.7004 (mg/s)
	mass flux in river at USGS Gage	M r6 =	65.7455 (mg/s)
mass flux into Colby Lake	M cl =	85.9021 (mg/s)	
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C r1 =	0.00216 (mg/L)
	concentration in river at SW-002	C r2 =	0.00214 (mg/L)
	concentration in river at SW-003	C r3 =	0.00213 (mg/L)
	concentration in river at SW-004	C r4 =	0.00213 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00211 (mg/L)
	concentration in river at SW-005	C r5 =	0.00211 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00211 (mg/L)
	concentration in Colby Lake (H)	C cl =	0.00213 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 1 Boron		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0450 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0450 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0450 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0450 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0450 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0450 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0450 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0450 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0450 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0960 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0870 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0870 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0870 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0870 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0870 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0870 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0870 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0870 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.0431 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.5697 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.7600 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.7600 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.0519 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0622 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.0370 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.0431 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.5697 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.7600 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.7600 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0519 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0622 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	0.0622 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0870 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0870 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0870 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	0.1253 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	107.19050 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.44318 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	2.71680 (mg/s)
	mass flux of surface water into SW-002	M s2 =	112.07694 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.88478 (mg/s)
	mass flux of surface water into SW-003	M s3 =	72.49070 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.26559 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.00027 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00075 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	74.77051 (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.79495 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00075 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00020 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00032 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.13461 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.03328 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00003 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00007 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00027 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	827.59682 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	3.42619 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	0.08199 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	0.06253 (mg/s)
	mass flux of surface water into SW-005	M s5 =	196.81474 (mg/s)
	mass flux of ground water into SW-005	M g5 =	5.58897 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	0.34957 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	1.15719 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	427.85780 (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	2.88066 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.49667 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M r1 =	110.3505 (mg/s)
	mass flux in river at SW-002	M r2 =	223.3122 (mg/s)
	mass flux in river at SW-003	M r3 =	296.0695 (mg/s)
	mass flux in river at SW-004	M r4 =	371.8045 (mg/s)
	mass flux in river at SW-004A	M r4A =	1,202.9720 (mg/s)
	mass flux in river at SW-005	M r5 =	1,405.3757 (mg/s)
	mass flux in river at USGS Gage	M r6 =	1,406.8825 (mg/s)
mass flux into Colby Lake	M cl =	1,838.1176 (mg/s)	
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C r1 =	0.04569 (mg/L)
	concentration in river at SW-002	C r2 =	0.04542 (mg/L)
	concentration in river at SW-003	C r3 =	0.04534 (mg/L)
	concentration in river at SW-004	C r4 =	0.04532 (mg/L)
	concentration in river at SW-004A	C r4A =	0.04516 (mg/L)
	concentration in river at SW-005	C r5 =	0.04523 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.04524 (mg/L)
	concentration in Colby Lake (H)	C cl =	0.04649 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 1 Barium		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0077 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0077 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0077 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0077 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0077 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0077 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0077 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0077 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0077 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0050 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0219 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0219 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0219 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0219 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0219 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0219 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0219 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0219 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.1834 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.1900 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.1900 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.1900 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.0132 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0168 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.0140 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.1834 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.1900 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.1900 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.1900 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0132 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0168 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	0.0168 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0219 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0219 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0219 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	0.0761 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	18.29384 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.11166 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.14150 (mg/s)
	mass flux of surface water into SW-002	M s2 =	19.12780 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.22292 (mg/s)
	mass flux of surface water into SW-003	M s3 =	12.37175 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.06692 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.00009 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00019 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	12.76083 (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.20029 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00019 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00005 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00008 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.03643 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.00901 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00001 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00002 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00016 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	141.24319 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.86324 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	0.03102 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	0.01692 (mg/s)
	mass flux of surface water into SW-005	M s5 =	33.58972 (mg/s)
	mass flux of ground water into SW-005	M g5 =	1.40816 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	0.05966 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.29156 (mg/s)
mass flux of surface water into Colby Lake	M scl =	73.02106 (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	0.72579 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.08476 (mg/s)	
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M r1 =	18.5470 (mg/s)
	mass flux in river at SW-002	M r2 =	37.8977 (mg/s)
	mass flux in river at SW-003	M r3 =	50.3367 (mg/s)
	mass flux in river at SW-004	M r4 =	63.3437 (mg/s)
	mass flux in river at SW-004A	M r4A =	205.4981 (mg/s)
	mass flux in river at SW-005	M r5 =	240.4960 (mg/s)
	mass flux in river at USGS Gage	M r6 =	240.8472 (mg/s)
mass flux into Colby Lake	M cl =	314.6788 (mg/s)	
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C r1 =	0.00768 (mg/L)
	concentration in river at SW-002	C r2 =	0.00771 (mg/L)
	concentration in river at SW-003	C r3 =	0.00771 (mg/L)
	concentration in river at SW-004	C r4 =	0.00772 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00771 (mg/L)
	concentration in river at SW-005	C r5 =	0.00774 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00775 (mg/L)
	concentration in Colby Lake (H)	C cl =	0.00810 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 1 Beryllium		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0001 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0001 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0001 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0001 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0001 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0001 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0001 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0001 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0001 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0001 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0001 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0001 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0001 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0001 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0001 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0001 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0001 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0001 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0002 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0002 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.0018 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	- (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.0002 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0002 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0018 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	- (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	- (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0001 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0001 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0001 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0005 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	0.23820 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.00074 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.00283 (mg/s)
	mass flux of surface water into SW-002	M s2 =	0.24906 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.00147 (mg/s)
	mass flux of surface water into SW-003	M s3 =	0.16109 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.00044 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	0.16616 (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.00132 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	- (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00000 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	1.83910 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.00571 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	- (mg/s)
	mass flux of surface water into SW-005	M s5 =	0.43737 (mg/s)
	mass flux of ground water into SW-005	M g5 =	0.00931 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	0.00078 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.00193 (mg/s)
mass flux of surface water into Colby Lake	M scl =	0.95080 (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	0.00480 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.00110 (mg/s)	
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M r1 =	0.2418 (mg/s)
	mass flux in river at SW-002	M r2 =	0.4923 (mg/s)
	mass flux in river at SW-003	M r3 =	0.6538 (mg/s)
	mass flux in river at SW-004	M r4 =	0.8213 (mg/s)
	mass flux in river at SW-004A	M r4A =	2.6661 (mg/s)
	mass flux in river at SW-005	M r5 =	3.1128 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M r6 =	3.1155 (mg/s)
	mass flux into Colby Lake	M cl =	4.0722 (mg/s)
	High Flow		
	concentration in river at SW-001	C r1 =	0.00010 (mg/L)
	concentration in river at SW-002	C r2 =	0.00010 (mg/L)
	concentration in river at SW-003	C r3 =	0.00010 (mg/L)
	concentration in river at SW-004	C r4 =	0.00010 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00010 (mg/L)
	concentration in river at SW-005	C r5 =	0.00010 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00010 (mg/L)
	concentration in Colby Lake (H)	C cl =	0.00010 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case	Year 1			
Parameter	Calcium			
Input concentration data	concentration of surface water into SW-001	C s1 =	17.0000 (mg/L)	
	concentration of surface water into SW-002	C s2 =	17.0000 (mg/L)	
	concentration of surface water into SW-003	C s3 =	17.0000 (mg/L)	
	concentration of surface water into SW-004	C s4 =	17.0000 (mg/L)	
	concentration of surface water into SW-004A	C s4A =	17.0000 (mg/L)	
	concentration of surface water into SW-005	C s5 =	17.0000 (mg/L)	
	concentration of surface water into USGS Gage	C s6 =	17.0000 (mg/L)	
	concentration of surface water into Colby Lake	C scl =	17.0000 (mg/L)	
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	17.0000 (mg/L)	
	concentration of surface water discharges from upstream of PM-1	C sns =	24.5000 (mg/L)	
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)	
	concentration of ground water into SW-001	C g1 =	14.7900 (mg/L)	
	concentration of ground water into SW-002	C g2 =	14.7900 (mg/L)	
	concentration of ground water into SW-003	C g3 =	14.7900 (mg/L)	
	concentration of ground water into SW-004	C g4 =	14.7900 (mg/L)	
	concentration of ground water into SW-004A	C g4A =	14.7900 (mg/L)	
	concentration of ground water into SW-005	C g5 =	14.7900 (mg/L)	
	concentration of ground water into USGS Gage	C g6 =	14.7900 (mg/L)	
	concentration of ground water into Colby Lake	C gcl =	14.7900 (mg/L)	
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)	
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)	
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	59.7495 (mg/L)	
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	466.9451 (mg/L)	
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	540.0000 (mg/L)	
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	540.0000 (mg/L)	
	concentration of liner leakage from LOSP	C gC4LO =	7.1230 (mg/L)	
	concentration of seepage from Overburden (Storage)	C gOS =	9.3700 (mg/L)	
	concentration of seepage from Overburden (Cat 1)	C gO12 =	15.8000 (mg/L)	
	concentration of liner leakage from Cat 1 sumps	C gC12s =	59.7495 (mg/L)	
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	466.9451 (mg/L)	
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	540.0000 (mg/L)	
	concentration of liner leakage from Cat 4 sumps	C gC4s =	540.0000 (mg/L)	
	concentration of liner leakage from LOSP sumps	C gC4LOs =	7.1230 (mg/L)	
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	9.3700 (mg/L)	
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	9.3700 (mg/L)	
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	14.7900 (mg/L)	
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	14.7900 (mg/L)	
	concentration of leakage from RTH Pond - PW3	C gRTHp =	14.7900 (mg/L)	
	concentration of liner leakage from WWTF ponc	C gWTFp =	76.3956 (mg/L)	
High Flow	mass flux of surface water into SW-001	M s1 =	40,494.18700 (mg/s)	
	mass flux of ground water into SW-001	M g1 =	75.34026 (mg/s)	
	mass flux of surface discharges from upstream of PM-1	M sns =	693.35000 (mg/s)	
	mass flux of surface water into SW-002	M s2 =	42,340.17664 (mg/s)	
	mass flux of ground water into SW-002	M g2 =	150.41258 (mg/s)	
	mass flux of surface water into SW-003	M s3 =	27,385.37425 (mg/s)	
	mass flux of ground water into SW-003	M g3 =	45.15051 (mg/s)	
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)	
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.21801 (mg/s)	
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.53602 (mg/s)	
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00038 (mg/s)	
	mass flux of surface water into SW-004	M s4 =	28,246.63556 (mg/s)	
	mass flux of ground water into SW-004	M g4 =	135.14150 (mg/s)	
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)	
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)	
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)	
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.53602 (mg/s)	
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.13907 (mg/s)	
	mass flux of liner leakage from LOSP	M gC4LO =	0.04331 (mg/s)	
	mass flux of seepage from Overburden (Storage)	M gOS =	20.27794 (mg/s)	
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00042 (mg/s)	
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00038 (mg/s)	
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00001 (mg/s)	
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	5.01400 (mg/s)	
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00563 (mg/s)	
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.01206 (mg/s)	
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)	
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.16358 (mg/s)	
	mass flux of surface water into SW-004A	M s4A =	312,647.68911 (mg/s)	
	mass flux of ground water into SW-004A	M g4A =	582.45226 (mg/s)	
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)	
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	- (mg/s)	
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00131 (mg/s)	
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	35.01322 (mg/s)	
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	9.42024 (mg/s)	
	mass flux of surface water into SW-005	M s5 =	74,352.23551 (mg/s)	
	mass flux of ground water into SW-005	M g5 =	950.12439 (mg/s)	
	mass flux of surface water into USGS Gage	M s6 =	132.06163 (mg/s)	
	mass flux of ground water into USGS Gage	M g6 =	196.72179 (mg/s)	
mass flux of surface water into Colby Lake	M scl =	161,635.16700 (mg/s)		
mass flux of ground water into Colby Lake	M gcl =	489.71169 (mg/s)		
mass flux of surface water from Hoyt Lakes WWTP	M shl =	187.62900 (mg/s)		
High Flow	mass flux in river at SW-001	M r1 =	41,262.8773 (mg/s)	
	mass flux in river at SW-002	M r2 =	83,753.4665 (mg/s)	
	mass flux in river at SW-003	M r3 =	111,184.7456 (mg/s)	
	mass flux in river at SW-004	M r4 =	139,592.7155 (mg/s)	
	mass flux in river at SW-004A	M r4A =	452,867.2916 (mg/s)	
	mass flux in river at SW-005	M r5 =	528,169.6515 (mg/s)	
	mass flux in river at USGS Gage	M r6 =	528,498.4349 (mg/s)	
mass flux into Colby Lake	M cl =	690,810.9426 (mg/s)		
High Flow	concentration in river at SW-001	C r1 =	17.08321 (mg/L)	
	concentration in river at SW-002	C r2 =	17.03631 (mg/L)	
	concentration in river at SW-003	C r3 =	17.02642 (mg/L)	
	concentration in river at SW-004	C r4 =	17.01614 (mg/L)	
	concentration in river at SW-004A	C r4A =	17.00132 (mg/L)	
	concentration in river at SW-005	C r5 =	16.99656 (mg/L)	
	concentration in river at USGS Gage	C r6 =	16.99562 (mg/L)	
	concentration in Colby Lake (H)	C cl =	16.96539 (mg/L)	
	High Flow	concentration in river at SW-001	C r1 =	17.08321 (mg/L)
		concentration in river at SW-002	C r2 =	17.03631 (mg/L)
		concentration in river at SW-003	C r3 =	17.02642 (mg/L)
concentration in river at SW-004		C r4 =	17.01614 (mg/L)	
concentration in river at SW-004A		C r4A =	17.00132 (mg/L)	
concentration in river at SW-005		C r5 =	16.99656 (mg/L)	
concentration in river at USGS Gage		C r6 =	16.99562 (mg/L)	
concentration in Colby Lake (H)		C cl =	16.96539 (mg/L)	

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case	Year 1		
Parameter	Cadmium		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0001 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0001 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0001 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0001 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0001 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0001 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0001 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0001 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0001 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0001 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0001 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0001 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0001 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0001 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0001 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0001 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0001 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0001 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0002 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0002 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.0101 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0001 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.0001 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.0002 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0002 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0101 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0001 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	0.0001 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0001 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0001 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0001 (mg/L)
	concentration of liner leakage from WWTF pond	C gWTFp =	0.0021 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	0.23820 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.00051 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.00283 (mg/s)
	mass flux of surface water into SW-002	M s2 =	0.24906 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.00102 (mg/s)
	mass flux of surface water into SW-003	M s3 =	0.16109 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.00031 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	0.16616 (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.00091 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00006 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.00013 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.00003 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00000 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	1.83910 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.00394 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	0.00006 (mg/s)
	mass flux of surface water into SW-005	M s5 =	0.43737 (mg/s)
	mass flux of ground water into SW-005	M g5 =	0.00642 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	0.00078 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.00133 (mg/s)
mass flux of surface water into Colby Lake	M scl =	0.95080 (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	0.00331 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.00110 (mg/s)	
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M r1 =	0.2415 (mg/s)
	mass flux in river at SW-002	M r2 =	0.4916 (mg/s)
	mass flux in river at SW-003	M r3 =	0.6530 (mg/s)
	mass flux in river at SW-004	M r4 =	0.8203 (mg/s)
	mass flux in river at SW-004A	M r4A =	2.6634 (mg/s)
	mass flux in river at SW-005	M r5 =	3.1072 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M r6 =	3.1093 (mg/s)
	mass flux into Colby Lake	M cl =	4.0645 (mg/s)
	High Flow		
	concentration in river at SW-001	C r1 =	0.00010 (mg/L)
	concentration in river at SW-002	C r2 =	0.00010 (mg/L)
	concentration in river at SW-003	C r3 =	0.00010 (mg/L)
	concentration in river at SW-004	C r4 =	0.00010 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00010 (mg/L)
	concentration in river at SW-005	C r5 =	0.00010 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00010 (mg/L)
	concentration in Colby Lake (H)	C cl =	0.00010 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case	Year 1		
Parameter	Chloride		
Input concentration data	concentration of surface water into SW-001	C_s1 =	8.0000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	8.0000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	8.0000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	8.0000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	8.0000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	8.0000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	8.0000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	8.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	8.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	1.6000 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	6.6000 (mg/L)
	concentration of ground water into SW-002	C_g2 =	6.6000 (mg/L)
	concentration of ground water into SW-003	C_g3 =	6.6000 (mg/L)
	concentration of ground water into SW-004	C_g4 =	6.6000 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	6.6000 (mg/L)
	concentration of ground water into SW-005	C_g5 =	6.6000 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	6.6000 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	6.6000 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	11.4458 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	18.4663 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	24.7549 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	8.0042 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.3926 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	5.3500 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	2.3300 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	11.4458 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	18.4663 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	24.7549 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	8.0042 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.3926 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	5.3500 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	5.3500 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	6.6000 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	6.6000 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	6.6000 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	10.7760 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	19,056.08800 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	33.62040 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	45.28000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	19,924.78901 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	67.12123 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	12,887.23494 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	20.14830 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00862 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.02457 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00001 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	13,292.53438 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	60.30655 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.02457 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00206 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00239 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	11.57812 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00002 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00001 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	2.86285 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00251 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00538 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.02307 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	147,128.32429 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	259.91785 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00025 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	5.16334 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	5.37868 (mg/s)
	mass flux of surface water into SW-005	M_s5 =	34,989.28730 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	423.99060 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	62.14665 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	87.78660 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	76.063.60800 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	218.53260 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	88.29600 (mg/s)
Mass balance at each node	mass flux in river at SW-001	M_r1 =	19,134.9884 (mg/s)
	mass flux in river at SW-002	M_r2 =	39,126.8986 (mg/s)
	mass flux in river at SW-003	M_r3 =	52,034.3151 (mg/s)
	mass flux in river at SW-004	M_r4 =	65,401.6570 (mg/s)
	mass flux in river at SW-004A	M_r4A =	212,800.4414 (mg/s)
	mass flux in river at SW-005	M_r5 =	248,213.7193 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	248,363.6526 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	324,734.0892 (mg/s)
	concentration in river at SW-001	C_r1 =	7.92206 (mg/L)
	concentration in river at SW-002	C_r2 =	7.95881 (mg/L)
	concentration in river at SW-003	C_r3 =	7.96834 (mg/L)
	concentration in river at SW-004	C_r4 =	7.97236 (mg/L)
	concentration in river at SW-004A	C_r4A =	7.98885 (mg/L)
	concentration in river at SW-005	C_r5 =	7.98755 (mg/L)
	concentration in river at USGS Gage	C_r6 =	7.98696 (mg/L)
	concentration in Colby Lake (H)	C_cl =	7.92606 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 1 Cobalt		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0005 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0005 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0005 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0005 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0005 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0005 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0005 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0005 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0005 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0005 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0017 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0017 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0017 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0017 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0017 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0017 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0017 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0017 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0017 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0520 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0520 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0520 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0860 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0011 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.0013 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0017 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0520 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_g3LOs =	0.0520 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0520 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0860 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0011 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	0.0011 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0017 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0017 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0017 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	0.0383 (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M_s1 =	1.19101 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00841 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.01415 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	1.24530 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.01678 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.80545 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00504 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00002 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00005 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.83078 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.01508 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00005 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00001 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00052 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00240 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00059 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00008 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	9.19552 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.06498 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.00288 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	0.00112 (mg/s)
	mass flux of surface water into SW-005	M_s5 =	2.18683 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.10600 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.00388 (mg/s)
mass flux of ground water into USGS Gage	M_g6 =	0.02195 (mg/s)	
mass flux of surface water into Colby Lake	M_scl =	4.75398 (mg/s)	
mass flux of ground water into Colby Lake	M_gcl =	0.05463 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00552 (mg/s)	
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	1.2136 (mg/s)
	mass flux in river at SW-002	M_r2 =	2.4756 (mg/s)
	mass flux in river at SW-003	M_r3 =	3.2862 (mg/s)
	mass flux in river at SW-004	M_r4 =	4.1357 (mg/s)
	mass flux in river at SW-004A	M_r4A =	13.4002 (mg/s)
	mass flux in river at SW-005	M_r5 =	15.6931 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	15.7169 (mg/s)
	mass flux into Colby Lake	M_cl =	20.5330 (mg/s)
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C_r1 =	0.00050 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00050 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00050 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00050 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00050 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00051 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00051 (mg/L)
	concentration in Colby Lake (H	C_cl =	0.00053 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 1 Copper		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0017 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0017 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0017 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0017 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0017 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0017 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0017 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0017 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0190 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0012 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0030 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0030 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0030 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0030 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0030 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0030 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0030 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0030 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0287 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0920 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0920 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0920 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0207 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0214 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.0170 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0287 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0920 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0920 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0920 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0207 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0214 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	0.0214 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0030 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0030 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0030 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0391 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	4.04942 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.01503 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.03509 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	4.23402 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.03000 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	2.73854 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00901 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00004 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00009 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	2.82466 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.02696 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00009 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00002 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00013 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.04640 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.01147 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00008 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	31.26477 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.11618 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.03767 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	0.02155 (mg/s)
	mass flux of surface water into SW-005	M_s5 =	7.43522 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.18951 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.01321 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.03924 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	16.16352 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.09768 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.20970 (mg/s)
Mass balance at each node	mass flux in river at SW-001	M_r1 =	4.0995 (mg/s)
	mass flux in river at SW-002	M_r2 =	8.3636 (mg/s)
	mass flux in river at SW-003	M_r3 =	11.1112 (mg/s)
	mass flux in river at SW-004	M_r4 =	14.0211 (mg/s)
	mass flux in river at SW-004A	M_r4A =	45.4612 (mg/s)
	mass flux in river at SW-005	M_r5 =	53.9860 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	53.1384 (mg/s)
	mass flux into Colby Lake	M_cl =	69.6093 (mg/s)
Convert mass flux to concentration	concentration in river at SW-001	C_r1 =	0.00170 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00170 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00170 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00171 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00171 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00171 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00171 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.00178 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 1 Fluoride		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0700 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0700 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0700 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0700 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0700 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0700 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0700 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0700 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0700 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.1400 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.2800 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.2800 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.2800 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.2800 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.2800 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.2800 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.2800 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.2800 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.0630 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.0622 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0621 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0621 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.0630 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.2239 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.4200 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.0630 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.0622 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.0621 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0621 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0630 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.2239 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	0.2239 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.2800 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.2800 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.2800 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	0.1775 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	166.74077 (mg/s)
	mass flux of ground water into SW-001	M g1 =	1.42632 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	3.96200 (mg/s)
	mass flux of surface water into SW-002	M s2 =	174.34190 (mg/s)
	mass flux of ground water into SW-002	M g2 =	2.84757 (mg/s)
	mass flux of surface water into SW-003	M s3 =	112.76331 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.85478 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.00003 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00006 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	116.30968 (mg/s)
	mass flux of ground water into SW-004	M g4 =	2.55846 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00006 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00002 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00038 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.48453 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.11981 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00011 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00023 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00038 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	1,287.37284 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	11.02682 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	0.93073 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	0.22509 (mg/s)
	mass flux of surface water into SW-005	M s5 =	306.15626 (mg/s)
	mass flux of ground water into SW-005	M g5 =	17.98748 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	0.54378 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	3.72428 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	665.55657 (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	9.27108 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.77259 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M r1 =	172.1291 (mg/s)
	mass flux in river at SW-002	M r2 =	349.3186 (mg/s)
	mass flux in river at SW-003	M r3 =	462.9367 (mg/s)
	mass flux in river at SW-004	M r4 =	582.4104 (mg/s)
	mass flux in river at SW-004A	M r4A =	1,881.9659 (mg/s)
	mass flux in river at SW-005	M r5 =	2,206.1096 (mg/s)
	mass flux in river at USGS Gage	M r6 =	2,210.3777 (mg/s)
mass flux into Colby Lake	M cl =	2,885.9779 (mg/s)	
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C r1 =	0.07126 (mg/L)
	concentration in river at SW-002	C r2 =	0.07105 (mg/L)
	concentration in river at SW-003	C r3 =	0.07089 (mg/L)
	concentration in river at SW-004	C r4 =	0.07099 (mg/L)
	concentration in river at SW-004A	C r4A =	0.07065 (mg/L)
	concentration in river at SW-005	C r5 =	0.07099 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.07108 (mg/L)
	concentration in Colby Lake (H)	C cl =	0.07668 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 1 Iron		
Input concentration data	concentration of surface water into SW-001	C s1 =	1.6000 (mg/L)
	concentration of surface water into SW-002	C s2 =	1.6000 (mg/L)
	concentration of surface water into SW-003	C s3 =	1.6000 (mg/L)
	concentration of surface water into SW-004	C s4 =	1.6000 (mg/L)
	concentration of surface water into SW-004A	C s4A =	1.6000 (mg/L)
	concentration of surface water into SW-005	C s5 =	1.6000 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	1.6000 (mg/L)
	concentration of surface water into Colby Lake	C scl =	1.6000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	1.6000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0300 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	2.8440 (mg/L)
	concentration of ground water into SW-002	C g2 =	2.8440 (mg/L)
	concentration of ground water into SW-003	C g3 =	2.8440 (mg/L)
	concentration of ground water into SW-004	C g4 =	2.8440 (mg/L)
	concentration of ground water into SW-004A	C g4A =	2.8440 (mg/L)
	concentration of ground water into SW-005	C g5 =	2.8440 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	2.8440 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	2.8440 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.2250 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.8100 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.8100 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.8100 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	24.9541 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.2255 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.1500 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.2250 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.8100 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.8100 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.8100 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	24.9541 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.2255 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	0.2255 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	2.8440 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	2.8440 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	2.8440 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	8.5792 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	3,811.21760 (mg/s)
	mass flux of ground water into SW-001	M g1 =	14.48734 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.84900 (mg/s)
	mass flux of surface water into SW-002	M s2 =	3,984.95780 (mg/s)
	mass flux of ground water into SW-002	M g2 =	28.92315 (mg/s)
	mass flux of surface water into SW-003	M s3 =	2,577.44699 (mg/s)
	mass flux of ground water into SW-003	M g3 =	8.68209 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.00038 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00080 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	2,658.50688 (mg/s)
	mass flux of ground water into SW-004	M g4 =	25.98664 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00080 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00021 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.15173 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.48801 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00003 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.12067 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00108 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00232 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.01837 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	29,425.66486 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	112.00096 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	0.33240 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	0.22671 (mg/s)
	mass flux of surface water into SW-005	M s5 =	6,997.85746 (mg/s)
	mass flux of ground water into SW-005	M g5 =	182.70140 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	12.42933 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	37.82804 (mg/s)
mass flux of surface water into Colby Lake	M scl =	15,212.72160 (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	94.16768 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	17.65920 (mg/s)	
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M r1 =	3,826.5539 (mg/s)
	mass flux in river at SW-002	M r2 =	7,840.4349 (mg/s)
	mass flux in river at SW-003	M r3 =	10,426.5651 (mg/s)
	mass flux in river at SW-004	M r4 =	13,111.8419 (mg/s)
	mass flux in river at SW-004A	M r4A =	42,650.0668 (mg/s)
	mass flux in river at SW-005	M r5 =	49,830.6257 (mg/s)
	mass flux in river at USGS Gage	M r6 =	49,880.8831 (mg/s)
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C r1 =	1.58423 (mg/L)
	concentration in river at SW-002	C r2 =	1.59482 (mg/L)
	concentration in river at SW-003	C r3 =	1.59669 (mg/L)
	concentration in river at SW-004	C r4 =	1.59831 (mg/L)
	concentration in river at SW-004A	C r4A =	1.60115 (mg/L)
	concentration in river at SW-005	C r5 =	1.60356 (mg/L)
	concentration in river at USGS Gage	C r6 =	1.60408 (mg/L)
	concentration in Colby Lake (H)	C cl =	1.62838 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case	Year 1		
Parameter	Hardness		
Input concentration data	concentration of surface water into SW-001	C_s1 =	110.0000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	110.0000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	110.0000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	110.0000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	110.0000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	110.0000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	110.0000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	110.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	110.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	110.0000 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	66.4200 (mg/L)
	concentration of ground water into SW-002	C_g2 =	66.4200 (mg/L)
	concentration of ground water into SW-003	C_g3 =	66.4200 (mg/L)
	concentration of ground water into SW-004	C_g4 =	66.4200 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	66.4200 (mg/L)
	concentration of ground water into SW-005	C_g5 =	66.4200 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	66.4200 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	66.4200 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	194.7623 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	1,547.1676 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	1,729.3495 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	1,729.3495 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	61.8614 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	43.5200 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	71.5000 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	194.7623 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	1,547.1676 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	1,729.3495 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	1,729.3495 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	61.8614 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	43.5200 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	43.5200 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	66.4200 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	66.4200 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	66.4200 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	268.9289 (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M_s1 =	262,021.21000 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	338.34348 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	3,113.00000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	273,965.84883 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	675.48367 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	177,199.48041 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	202.76516 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.72236 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	1.71660 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00125 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	182,772.34772 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	606.90322 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	1.71660 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.44538 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.37615 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	94.18314 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00133 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00121 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00008 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	23.28806 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.02527 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.05414 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00002 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.57584 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	##### (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	2,615.71869 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00427 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	158.44592 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	43.75333 (mg/s)
	mass flux of surface water into SW-005	M_s5 =	481,102.70037 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	4,266.88722 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	854.51640 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	883.45242 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	##### (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	2,199.23262 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	1,214.07000 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	265,472.5535 (mg/s)
	mass flux in river at SW-002	M_r2 =	540,113.8860 (mg/s)
	mass flux in river at SW-003	M_r3 =	717,518.5718 (mg/s)
	mass flux in river at SW-004	M_r4 =	901,018.4918 (mg/s)
	mass flux in river at SW-004A	M_r4A =	2,926,850.8723 (mg/s)
	mass flux in river at SW-005	M_r5 =	3,412,220.4599 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	3,413,958.4287 (mg/s)
	mass flux into Colby Lake	M_cl =	4,463,246.3414 (mg/s)
	High Flow		
	concentration in river at SW-001	C_r1 =	109.90809 (mg/L)
	concentration in river at SW-002	C_r2 =	109.86469 (mg/L)
	concentration in river at SW-003	C_r3 =	109.87811 (mg/L)
	concentration in river at SW-004	C_r4 =	109.83281 (mg/L)
	concentration in river at SW-004A	C_r4A =	109.87837 (mg/L)
	concentration in river at SW-005	C_r5 =	109.80564 (mg/L)
	concentration in river at USGS Gage	C_r6 =	109.78714 (mg/L)
	concentration in Colby Lake (H)	C_cl =	108.66601 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 1 Potassium		
Input concentration data	concentration of surface water into SW-001	C s1 =	1.3000 (mg/L)
	concentration of surface water into SW-002	C s2 =	1.3000 (mg/L)
	concentration of surface water into SW-003	C s3 =	1.3000 (mg/L)
	concentration of surface water into SW-004	C s4 =	1.3000 (mg/L)
	concentration of surface water into SW-004A	C s4A =	1.3000 (mg/L)
	concentration of surface water into SW-005	C s5 =	1.3000 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	1.3000 (mg/L)
	concentration of surface water into Colby Lake	C scl =	1.3000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	1.3000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	2.7000 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	1.7500 (mg/L)
	concentration of ground water into SW-002	C g2 =	1.7500 (mg/L)
	concentration of ground water into SW-003	C g3 =	1.7500 (mg/L)
	concentration of ground water into SW-004	C g4 =	1.7500 (mg/L)
	concentration of ground water into SW-004A	C g4A =	1.7500 (mg/L)
	concentration of ground water into SW-005	C g5 =	1.7500 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	1.7500 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	1.7500 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	12.8456 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	49.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	49.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	49.0000 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	3.2776 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	2.2600 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	4.4500 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	12.8456 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	49.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	49.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	49.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	3.2776 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	2.2600 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	2.2600 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	1.7500 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	1.7500 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	1.7500 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	12.8932 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	3,096.61430 (mg/s)
	mass flux of ground water into SW-001	M g1 =	8.91450 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	76.41000 (mg/s)
	mass flux of surface water into SW-002	M s2 =	3,237.77821 (mg/s)
	mass flux of ground water into SW-002	M g2 =	17.79730 (mg/s)
	mass flux of surface water into SW-003	M s3 =	2,094.17568 (mg/s)
	mass flux of ground water into SW-003	M g3 =	5.34235 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.02288 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.04864 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00004 (mg/s)
	mass flux of surface water into SW-004	M s4 =	2,160.03684 (mg/s)
	mass flux of ground water into SW-004	M g4 =	15.99037 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.04864 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.01262 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.01993 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	4.89094 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00004 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00003 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	1.20935 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00067 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00143 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.02761 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	23,908.35270 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	68.91761 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00028 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	9.86132 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	2.27212 (mg/s)
	mass flux of surface water into SW-005	M s5 =	5,685.75919 (mg/s)
	mass flux of ground water into SW-005	M g5 =	112.42175 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	10.99883 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	23.27675 (mg/s)
mass flux of surface water into Colby Lake	M scl =	12,360.33630 (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	57.94425 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	14.34810 (mg/s)	
Mass balance at each node		High Flow	
	mass flux in river at SW-001	M r1 =	3,181.9388 (mg/s)
	mass flux in river at SW-002	M r2 =	6,437.5143 (mg/s)
	mass flux in river at SW-003	M r3 =	8,537.1039 (mg/s)
	mass flux in river at SW-004	M r4 =	10,719.3424 (mg/s)
	mass flux in river at SW-004A	M r4A =	34,708.7464 (mg/s)
	mass flux in river at SW-005	M r5 =	40,506.9274 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M r6 =	40,540.3029 (mg/s)
	mass flux into Colby Lake	M cl =	52,972.9316 (mg/s)
		High Flow	
	concentration in river at SW-001	C r1 =	1.31735 (mg/L)
	concentration in river at SW-002	C r2 =	1.30946 (mg/L)
	concentration in river at SW-003	C r3 =	1.30734 (mg/L)
	concentration in river at SW-004	C r4 =	1.30667 (mg/L)
	concentration in river at SW-004A	C r4A =	1.30302 (mg/L)
	concentration in river at SW-005	C r5 =	1.30352 (mg/L)
	concentration in river at USGS Gage	C r6 =	1.30371 (mg/L)
	concentration in Colby Lake (H)	C cl =	1.32093 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case	Year 1		
Parameter	Magnesium		
Input concentration data	concentration of surface water into SW-001	C s1 =	8.0000 (mg/L)
	concentration of surface water into SW-002	C s2 =	8.0000 (mg/L)
	concentration of surface water into SW-003	C s3 =	8.0000 (mg/L)
	concentration of surface water into SW-004	C s4 =	8.0000 (mg/L)
	concentration of surface water into SW-004A	C s4A =	8.0000 (mg/L)
	concentration of surface water into SW-005	C s5 =	8.0000 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	8.0000 (mg/L)
	concentration of surface water into Colby Lake	C scl =	8.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	8.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	10.5000 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	8.0200 (mg/L)
	concentration of ground water into SW-002	C g2 =	8.0200 (mg/L)
	concentration of ground water into SW-003	C g3 =	8.0200 (mg/L)
	concentration of ground water into SW-004	C g4 =	8.0200 (mg/L)
	concentration of ground water into SW-004A	C g4A =	8.0200 (mg/L)
	concentration of ground water into SW-005	C g5 =	8.0200 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	8.0200 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	8.0200 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	11.1200 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	93.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	93.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	93.0000 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	10.7159 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	4.8800 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	9.0100 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	11.1200 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	93.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	93.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	93.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	10.7159 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	4.8800 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	4.8800 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	8.0200 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	8.0200 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	8.0200 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	19.0551 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	19,056.08800 (mg/s)
	mass flux of ground water into SW-001	M g1 =	40.85388 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	297.15000 (mg/s)
	mass flux of surface water into SW-002	M s2 =	19,924.78901 (mg/s)
	mass flux of ground water into SW-002	M g2 =	81.56247 (mg/s)
	mass flux of surface water into SW-003	M s3 =	12,887.23494 (mg/s)
	mass flux of ground water into SW-003	M g3 =	24.48324 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.04342 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.09231 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00007 (mg/s)
	mass flux of surface water into SW-004	M s4 =	13,292.53438 (mg/s)
	mass flux of ground water into SW-004	M g4 =	73.28160 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.09231 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.02395 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.06516 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	10.56098 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00007 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00007 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00001 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	2.61135 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00305 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00654 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.04080 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	147,128.32429 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	315.83956 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00024 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	19.96640 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	4.90616 (mg/s)
	mass flux of surface water into SW-005	M s5 =	34,989.28730 (mg/s)
	mass flux of ground water into SW-005	M g5 =	515.21282 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	62.14665 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	106.67402 (mg/s)
mass flux of surface water into Colby Lake	M scl =	76,063.60800 (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	265.55022 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	88.29600 (mg/s)	
Mass balance at each node	mass flux in river at SW-001	M r1 =	19,394.0919 (mg/s)
	mass flux in river at SW-002	M r2 =	39,400.4434 (mg/s)
	mass flux in river at SW-003	M r3 =	52,312.2973 (mg/s)
	mass flux in river at SW-004	M r4 =	65,691.5177 (mg/s)
	mass flux in river at SW-004A	M r4A =	213,160.5543 (mg/s)
	mass flux in river at SW-005	M r5 =	248,665.0545 (mg/s)
	mass flux in river at USGS Gage	M r6 =	248,833.8751 (mg/s)
mass flux into Colby Lake	M cl =	325,251.3294 (mg/s)	
Convert mass flux to concentration	concentration in river at SW-001	C r1 =	8.02933 (mg/L)
	concentration in river at SW-002	C r2 =	8.01445 (mg/L)
	concentration in river at SW-003	C r3 =	8.01091 (mg/L)
	concentration in river at SW-004	C r4 =	8.00770 (mg/L)
	concentration in river at SW-004A	C r4A =	8.00237 (mg/L)
	concentration in river at SW-005	C r5 =	8.00207 (mg/L)
	concentration in river at USGS Gage	C r6 =	8.00208 (mg/L)
	concentration in Colby Lake (H	C cl =	8.01063 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case	Year 1			
Parameter	Manganese			
Input concentration data	concentration of surface water into SW-001	C s1 =	0.1500 (mg/L)	
	concentration of surface water into SW-002	C s2 =	0.1500 (mg/L)	
	concentration of surface water into SW-003	C s3 =	0.1500 (mg/L)	
	concentration of surface water into SW-004	C s4 =	0.1500 (mg/L)	
	concentration of surface water into SW-004A	C s4A =	0.1500 (mg/L)	
	concentration of surface water into SW-005	C s5 =	0.1500 (mg/L)	
	concentration of surface water into USGS Gage	C s6 =	0.1500 (mg/L)	
	concentration of surface water into Colby Lake	C scl =	0.1500 (mg/L)	
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.1500 (mg/L)	
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0086 (mg/L)	
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)	
	concentration of ground water into SW-001	C g1 =	0.1240 (mg/L)	
	concentration of ground water into SW-002	C g2 =	0.1240 (mg/L)	
	concentration of ground water into SW-003	C g3 =	0.1240 (mg/L)	
	concentration of ground water into SW-004	C g4 =	0.1240 (mg/L)	
	concentration of ground water into SW-004A	C g4A =	0.1240 (mg/L)	
	concentration of ground water into SW-005	C g5 =	0.1240 (mg/L)	
	concentration of ground water into USGS Gage	C g6 =	0.1240 (mg/L)	
	concentration of ground water into Colby Lake	C gcl =	0.1240 (mg/L)	
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)	
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)	
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.0263 (mg/L)	
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.7500 (mg/L)	
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.7500 (mg/L)	
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.7500 (mg/L)	
	concentration of liner leakage from LOSP	C gC4LO =	0.2201 (mg/L)	
	concentration of seepage from Overburden (Storage)	C gOS =	0.1604 (mg/L)	
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.1160 (mg/L)	
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.0263 (mg/L)	
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.7500 (mg/L)	
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.7500 (mg/L)	
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.7500 (mg/L)	
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.2201 (mg/L)	
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.1604 (mg/L)	
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	0.1604 (mg/L)	
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.1240 (mg/L)	
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.1240 (mg/L)	
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.1240 (mg/L)	
	concentration of liner leakage from WWTF ponc	C_gWTFp =	0.1656 (mg/L)	
	Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	357.30165 (mg/s)
		mass flux of ground water into SW-001	M g1 =	0.63166 (mg/s)
		mass flux of surface discharges from upstream of PM-1	M sns =	0.24338 (mg/s)
mass flux of surface water into SW-002		M s2 =	373.58979 (mg/s)	
mass flux of ground water into SW-002		M g2 =	1.26107 (mg/s)	
mass flux of surface water into SW-003		M s3 =	241.63566 (mg/s)	
mass flux of ground water into SW-003		M g3 =	0.37854 (mg/s)	
mass flux of seepage from East Pit to SW-003		M gep_003 =	#N/A (mg/s)	
mass flux of liner leakage from Cat 2/3 stockpile to SW-003		M gC3_003 =	0.00035 (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-003		M gC3LO_003 =	0.00074 (mg/s)	
mass flux of liner leakage from Cat 2/3 sumps to SW-003		M gC3s_003 =	0.00000 (mg/s)	
mass flux of surface water into SW-004		M s4 =	249.23502 (mg/s)	
mass flux of ground water into SW-004		M g4 =	1.13303 (mg/s)	
mass flux of seepage from East Pit to SW-004		M gep_004 =	#N/A (mg/s)	
mass flux of seepage from West Pit		M gwp =	#N/A (mg/s)	
mass flux of liner leakage from Cat 2/3 stockpile to SW-004		M gC3_004 =	- (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-004		M gC3LO_004 =	0.00074 (mg/s)	
mass flux of liner leakage from Cat 4 stockpile		M gC4 =	0.00019 (mg/s)	
mass flux of liner leakage from LOSP		M gC4LO =	0.00134 (mg/s)	
mass flux of seepage from Overburden (Storage)		M gOS =	0.34711 (mg/s)	
mass flux of liner leakage from Cat 3LO sumps to SW-004		M gC3LOs_004 =	0.00000 (mg/s)	
mass flux of liner leakage from Cat 4 sumps		M gC4s =	0.00000 (mg/s)	
mass flux of liner leakage from LOSP sumps		M gC4LOs =	0.00000 (mg/s)	
mass flux of seepage from Overburden Ponds - PW1		M gOp1 =	0.08583 (mg/s)	
mass flux of leakage from Haul Road Pond - PW2		M gHRp2 =	0.00005 (mg/s)	
mass flux of leakage from Haul Road Pond - PW4		M gHRp4 =	0.00010 (mg/s)	
mass flux of leakage from RTH Pond - PW3		M gRTHp =	0.00000 (mg/s)	
mass flux of liner leakage from WWTF pond		M gWTFp =	0.00035 (mg/s)	
mass flux of surface water into SW-004A		M s4A =	2,758.65608 (mg/s)	
mass flux of ground water into SW-004A		M g4A =	4.88330 (mg/s)	
mass flux of West Pit overflow		M sms =	#N/A (mg/s)	
mass flux of liner leakage from Cat 1 stockpile		M gC12 =	- (mg/s)	
mass flux of liner leakage from Cat 1 sumps		M gC12s =	0.00000 (mg/s)	
mass flux of seepage from Overburden (Cat 1)		M gO12 =	0.25706 (mg/s)	
mass flux of seepage from Overburden Pond - PW7		M gOp7 =	0.16125 (mg/s)	
mass flux of surface water into SW-005		M s5 =	656.04914 (mg/s)	
mass flux of ground water into SW-005		M g5 =	7.96588 (mg/s)	
mass flux of surface water into USGS Gage		M s6 =	1.16525 (mg/s)	
mass flux of ground water into USGS Gage		M g6 =	1.64932 (mg/s)	
mass flux of surface water into Colby Lake		M scl =	1,426.19265 (mg/s)	
mass flux of ground water into Colby Lake		M gcl =	4.10576 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP		M shl =	1.65555 (mg/s)	
Mass balance at each node	High Flow			
	mass flux in river at SW-001	M r1 =	358.1767 (mg/s)	
	mass flux in river at SW-002	M r2 =	733.0275 (mg/s)	
	mass flux in river at SW-003	M r3 =	975.0428 (mg/s)	
	mass flux in river at SW-004	M r4 =	1,225.8466 (mg/s)	
	mass flux in river at SW-004A	M r4A =	3,989.8043 (mg/s)	
	mass flux in river at SW-005	M r5 =	4,653.8193 (mg/s)	
	mass flux in river at USGS Gage	M r6 =	4,656.6339 (mg/s)	
Convert mass flux to concentration	mass flux into Colby Lake	M cl =	6,088.5879 (mg/s)	
	High Flow			
	concentration in river at SW-001	C r1 =	0.14829 (mg/L)	
	concentration in river at SW-002	C r2 =	0.14911 (mg/L)	
	concentration in river at SW-003	C r3 =	0.14931 (mg/L)	
	concentration in river at SW-004	C r4 =	0.14943 (mg/L)	
	concentration in river at SW-004A	C r4A =	0.14978 (mg/L)	
	concentration in river at SW-005	C r5 =	0.14976 (mg/L)	
	concentration in river at USGS Gage	C r6 =	0.14975 (mg/L)	
	concentration in Colby Lake (H	C cl =	0.14857 (mg/L)	



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case	Year 1			
Parameter	Sodium			
Input concentration data	concentration of surface water into SW-001	C s1 =	2.5000 (mg/L)	
	concentration of surface water into SW-002	C s2 =	2.5000 (mg/L)	
	concentration of surface water into SW-003	C s3 =	2.5000 (mg/L)	
	concentration of surface water into SW-004	C s4 =	2.5000 (mg/L)	
	concentration of surface water into SW-004A	C s4A =	2.5000 (mg/L)	
	concentration of surface water into SW-005	C s5 =	2.5000 (mg/L)	
	concentration of surface water into USGS Gage	C s6 =	2.5000 (mg/L)	
	concentration of surface water into Colby Lake	C scl =	2.5000 (mg/L)	
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	2.5000 (mg/L)	
	concentration of surface water discharges from upstream of PM-1	C sns =	4.8000 (mg/L)	
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)	
	concentration of ground water into SW-001	C g1 =	13.3300 (mg/L)	
	concentration of ground water into SW-002	C g2 =	13.3300 (mg/L)	
	concentration of ground water into SW-003	C g3 =	13.3300 (mg/L)	
	concentration of ground water into SW-004	C g4 =	13.3300 (mg/L)	
	concentration of ground water into SW-004A	C g4A =	13.3300 (mg/L)	
	concentration of ground water into SW-005	C g5 =	13.3300 (mg/L)	
	concentration of ground water into USGS Gage	C g6 =	13.3300 (mg/L)	
	concentration of ground water into Colby Lake	C gcl =	13.3300 (mg/L)	
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)	
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)	
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	17.9855 (mg/L)	
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	148.7326 (mg/L)	
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	199.3824 (mg/L)	
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	80.8622 (mg/L)	
	concentration of liner leakage from LOSP	C gC4LO =	1.3446 (mg/L)	
	concentration of seepage from Overburden (Storage)	C gOS =	4.6000 (mg/L)	
	concentration of seepage from Overburden (Cat 1)	C gO12 =	7.1900 (mg/L)	
	concentration of liner leakage from Cat 1 sumps	C gC12s =	17.9855 (mg/L)	
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	148.7326 (mg/L)	
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	199.3824 (mg/L)	
	concentration of liner leakage from Cat 4 sumps	C gC4s =	80.8622 (mg/L)	
	concentration of liner leakage from LOSP sumps	C gC4LOs =	1.3446 (mg/L)	
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	4.6000 (mg/L)	
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	4.6000 (mg/L)	
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	13.3300 (mg/L)	
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	13.3300 (mg/L)	
	concentration of leakage from RTH Pond - PW3	C gRTHp =	13.3300 (mg/L)	
	concentration of liner leakage from WWTF pond	C_gWTFp =	34.9869 (mg/L)	
	Convert concentration to mass flux	High Flow		
		mass flux of surface water into SW-001	M s1 =	5,955.02750 (mg/s)
		mass flux of ground water into SW-001	M g1 =	67.90302 (mg/s)
		mass flux of surface discharges from upstream of PM-1	M sns =	135.84000 (mg/s)
mass flux of surface water into SW-002		M s2 =	6,226.49656 (mg/s)	
mass flux of ground water into SW-002		M g2 =	135.56455 (mg/s)	
mass flux of surface water into SW-003		M s3 =	4,027.26092 (mg/s)	
mass flux of ground water into SW-003		M g3 =	40.69346 (mg/s)	
mass flux of seepage from East Pit to SW-003		M gep_003 =	#N/A (mg/s)	
mass flux of liner leakage from Cat 2/3 stockpile to SW-003		M gC3_003 =	0.06944 (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-003		M gC3LO_003 =	0.19791 (mg/s)	
mass flux of liner leakage from Cat 2/3 sumps to SW-003		M gC3s_003 =	0.00012 (mg/s)	
mass flux of surface water into SW-004		M s4 =	4,153.91699 (mg/s)	
mass flux of ground water into SW-004		M g4 =	121.80096 (mg/s)	
mass flux of seepage from East Pit to SW-004		M gep_004 =	#N/A (mg/s)	
mass flux of seepage from West Pit		M gwp =	#N/A (mg/s)	
mass flux of liner leakage from Cat 2/3 stockpile to SW-004		M gC3_004 =	- (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-004		M gC3LO_004 =	0.19791 (mg/s)	
mass flux of liner leakage from Cat 4 stockpile		M gC4 =	0.02083 (mg/s)	
mass flux of liner leakage from LOSP		M gC4LO =	0.00818 (mg/s)	
mass flux of seepage from Overburden (Storage)		M gOS =	9.95502 (mg/s)	
mass flux of liner leakage from Cat 3LO sumps to SW-004		M gC3LOs_004 =	0.00015 (mg/s)	
mass flux of liner leakage from Cat 4 sumps		M gC4s =	0.00006 (mg/s)	
mass flux of liner leakage from LOSP sumps		M gC4LOs =	0.00000 (mg/s)	
mass flux of seepage from Overburden Ponds - PW1		M gOp1 =	2.46151 (mg/s)	
mass flux of leakage from Haul Road Pond - PW2		M gHRp2 =	0.00507 (mg/s)	
mass flux of leakage from Haul Road Pond - PW4		M gHRp4 =	0.01087 (mg/s)	
mass flux of leakage from RTH Pond - PW3		M gRTHp =	0.00000 (mg/s)	
mass flux of liner leakage from WWTF pond		M gWTFp =	0.07492 (mg/s)	
mass flux of surface water into SW-004A		M s4A =	45,977.60134 (mg/s)	
mass flux of ground water into SW-004A		M g4A =	524.95529 (mg/s)	
mass flux of West Pit overflow		M sms =	#N/A (mg/s)	
mass flux of liner leakage from Cat 1 stockpile		M gC12 =	- (mg/s)	
mass flux of liner leakage from Cat 1 sumps		M gC12s =	0.00039 (mg/s)	
mass flux of seepage from Overburden (Cat 1)		M gO12 =	15.93323 (mg/s)	
mass flux of seepage from Overburden Pond - PW7		M gOp7 =	4.62466 (mg/s)	
mass flux of surface water into SW-005		M s5 =	10,934.15228 (mg/s)	
mass flux of ground water into SW-005		M g5 =	856.33253 (mg/s)	
mass flux of surface water into USGS Gage		M s6 =	19.42083 (mg/s)	
mass flux of ground water into USGS Gage		M g6 =	177.30233 (mg/s)	
mass flux of surface water into Colby Lake		M scl =	23,769.87750 (mg/s)	
mass flux of ground water into Colby Lake		M gcl =	441.36963 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP		M shl =	27.59250 (mg/s)	
Mass balance at each node	High Flow			
	mass flux in river at SW-001	M r1 =	6,158.7705 (mg/s)	
	mass flux in river at SW-002	M r2 =	12,520.8316 (mg/s)	
	mass flux in river at SW-003	M r3 =	16,589.0535 (mg/s)	
	mass flux in river at SW-004	M r4 =	20,877.5061 (mg/s)	
	mass flux in river at SW-004A	M r4A =	67,400.6210 (mg/s)	
	mass flux in river at SW-005	M r5 =	79,191.1058 (mg/s)	
Convert mass flux to concentration	mass flux in river at USGS Gage	M r6 =	79,387.8290 (mg/s)	
	mass flux into Colby Lake	M cl =	103,626.6686 (mg/s)	
	High Flow			
	concentration in river at SW-001	C r1 =	2.54979 (mg/L)	
	concentration in river at SW-002	C r2 =	2.54687 (mg/L)	
	concentration in river at SW-003	C r3 =	2.54039 (mg/L)	
	concentration in river at SW-004	C r4 =	2.54494 (mg/L)	
	concentration in river at SW-004A	C r4A =	2.53032 (mg/L)	
	concentration in river at SW-005	C r5 =	2.54838 (mg/L)	
	concentration in river at USGS Gage	C r6 =	2.55298 (mg/L)	
	concentration in Colby Lake (H)	C cl =	2.83310 (mg/L)	

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 1 Nickel		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0016 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0016 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0016 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0016 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0016 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0016 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0016 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0016 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0033 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0016 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0163 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0163 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0163 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0163 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0163 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0163 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0163 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0163 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.0114 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.8600 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.8600 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.8600 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	1.1140 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0080 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.0190 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.0114 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.8600 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.8600 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.8600 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	1.1140 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0080 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	0.0080 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0163 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0163 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0163 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	0.5201 (mg/L)
	Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =
mass flux of ground water into SW-001		M g1 =	0.08293 (mg/s)
mass flux of surface discharges from upstream of PM-1		M sns =	0.04387 (mg/s)
mass flux of surface water into SW-002		M s2 =	3.88533 (mg/s)
mass flux of ground water into SW-002		M g2 =	0.16557 (mg/s)
mass flux of surface water into SW-003		M s3 =	2.51301 (mg/s)
mass flux of ground water into SW-003		M g3 =	0.04970 (mg/s)
mass flux of seepage from East Pit to SW-003		M gep 003 =	#N/A (mg/s)
mass flux of liner leakage from Cat 2/3 stockpile to SW-003		M gC3 003 =	0.00040 (mg/s)
mass flux of liner leakage from Cat 3LO stockpile to SW-003		M gC3LO 003 =	0.00085 (mg/s)
mass flux of liner leakage from Cat 2/3 sumps to SW-003		M gC3s 003 =	0.00000 (mg/s)
mass flux of surface water into SW-004		M s4 =	2.59204 (mg/s)
mass flux of ground water into SW-004		M g4 =	0.14876 (mg/s)
mass flux of seepage from East Pit to SW-004		M gep 004 =	#N/A (mg/s)
mass flux of seepage from West Pit		M gwp =	#N/A (mg/s)
mass flux of liner leakage from Cat 2/3 stockpile to SW-004		M gC3 004 =	- (mg/s)
mass flux of liner leakage from Cat 3LO stockpile to SW-004		M gC3LO 004 =	0.00085 (mg/s)
mass flux of liner leakage from Cat 4 stockpile		M gC4 =	0.00022 (mg/s)
mass flux of liner leakage from LOSP		M gC4LO =	0.00677 (mg/s)
mass flux of seepage from Overburden (Storage)		M gOS =	0.01725 (mg/s)
mass flux of liner leakage from Cat 3LO sumps to SW-004		M gC3LOs 004 =	0.00000 (mg/s)
mass flux of liner leakage from Cat 4 sumps		M gC4s =	0.00000 (mg/s)
mass flux of liner leakage from LOSP sumps		M gC4LOs =	0.00000 (mg/s)
mass flux of seepage from Overburden Ponds - PW1		M gOp1 =	0.00426 (mg/s)
mass flux of leakage from Haul Road Pond - PW2		M gHRp2 =	0.00001 (mg/s)
mass flux of leakage from Haul Road Pond - PW4		M gHRp4 =	0.00001 (mg/s)
mass flux of leakage from RTH Pond - PW3		M gRTHp =	0.00000 (mg/s)
mass flux of liner leakage from WWTF pond		M gWTFp =	0.00111 (mg/s)
mass flux of surface water into SW-004A		M s4A =	28.69002 (mg/s)
mass flux of ground water into SW-004A		M g4A =	0.64113 (mg/s)
mass flux of West Pit overflow		M sms =	#N/A (mg/s)
mass flux of liner leakage from Cat 1 stockpile		M gC12 =	- (mg/s)
mass flux of liner leakage from Cat 1 sumps		M gC12s =	0.00000 (mg/s)
mass flux of seepage from Overburden (Cat 1)		M gO12 =	0.04210 (mg/s)
mass flux of seepage from Overburden Pond - PW7		M gOp7 =	0.00801 (mg/s)
mass flux of surface water into SW-005		M s5 =	6.82291 (mg/s)
mass flux of ground water into SW-005		M g5 =	1.04584 (mg/s)
mass flux of surface water into USGS Gage		M s6 =	0.01212 (mg/s)
mass flux of ground water into USGS Gage		M g6 =	0.21654 (mg/s)
mass flux of surface water into Colby Lake		M scl =	14.83240 (mg/s)
mass flux of ground water into Colby Lake	M gcl =	0.53905 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.03642 (mg/s)	
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M r1 =	3.8427 (mg/s)
	mass flux in river at SW-002	M r2 =	7.8936 (mg/s)
	mass flux in river at SW-003	M r3 =	10.4576 (mg/s)
	mass flux in river at SW-004	M r4 =	13.2289 (mg/s)
	mass flux in river at SW-004A	M r4A =	42.6102 (mg/s)
	mass flux in river at SW-005	M r5 =	50.4789 (mg/s)
	mass flux in river at USGS Gage	M r6 =	50.7076 (mg/s)
mass flux into Colby Lake	M cl =	66.1155 (mg/s)	
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C r1 =	0.00159 (mg/L)
	concentration in river at SW-002	C r2 =	0.00161 (mg/L)
	concentration in river at SW-003	C r3 =	0.00160 (mg/L)
	concentration in river at SW-004	C r4 =	0.00161 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00160 (mg/L)
	concentration in river at SW-005	C r5 =	0.00162 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00163 (mg/L)
	concentration in Colby Lake (H	C cl =	0.00201 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 1 Lead		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0005 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0005 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0005 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0005 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0005 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0005 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0005 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0005 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0005 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0002 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0011 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0011 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0011 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0011 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0011 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0011 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0011 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0011 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.0014 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.0055 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0073 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0114 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.0019 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0007 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.0014 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.0055 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.0073 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0114 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0019 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0007 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	0.0007 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0011 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0011 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0011 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	0.0029 (mg/L)
Convert concentration to mass flux			High Flow
	mass flux of surface water into SW-001	M s1 =	1.19101 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.00571 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.00425 (mg/s)
	mass flux of surface water into SW-002	M s2 =	1.24530 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.01139 (mg/s)
	mass flux of surface water into SW-003	M s3 =	0.80545 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.00342 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	0.83078 (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.01023 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.00146 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.00036 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00001 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	9.19552 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.04411 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	0.00068 (mg/s)
	mass flux of surface water into SW-005	M s5 =	2.18683 (mg/s)
	mass flux of ground water into SW-005	M g5 =	0.07195 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	0.00388 (mg/s)
mass flux of ground water into USGS Gage	M g6 =	0.01490 (mg/s)	
mass flux of surface water into Colby Lake	M scl =	4.75398 (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	0.03708 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.00552 (mg/s)	
Mass balance at each node			High Flow
	mass flux in river at SW-001	M r1 =	1.2010 (mg/s)
	mass flux in river at SW-002	M r2 =	2.4576 (mg/s)
	mass flux in river at SW-003	M r3 =	3.2665 (mg/s)
	mass flux in river at SW-004	M r4 =	4.1094 (mg/s)
	mass flux in river at SW-004A	M r4A =	13.3497 (mg/s)
	mass flux in river at SW-005	M r5 =	15.6085 (mg/s)
	mass flux in river at USGS Gage	M r6 =	15.6273 (mg/s)
	mass flux into Colby Lake	M cl =	20.4238 (mg/s)
Convert mass flux to concentration			High Flow
	concentration in river at SW-001	C r1 =	0.00050 (mg/L)
	concentration in river at SW-002	C r2 =	0.00050 (mg/L)
	concentration in river at SW-003	C r3 =	0.00050 (mg/L)
	concentration in river at SW-004	C r4 =	0.00050 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00050 (mg/L)
	concentration in river at SW-005	C r5 =	0.00050 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00050 (mg/L)
	concentration in Colby Lake (H)	C cl =	0.00052 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case	Year 1		
Parameter	Antimony		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0015 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0015 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0015 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0015 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0015 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0015 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0015 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0015 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0015 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0015 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0015 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0015 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0015 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0015 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0015 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0015 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0015 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0015 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0490 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0800 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0800 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0800 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0006 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0003 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.0004 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0490 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0800 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0800 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0800 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0006 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0003 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	0.0003 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0015 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0015 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0015 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0301 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	3.57302 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00764 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.04245 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	3.73590 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.01525 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	2.41636 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00458 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00004 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00008 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
mass flux of surface water into SW-004	M_s4 =	2.49235 (mg/s)	
mass flux of ground water into SW-004	M_g4 =	0.01371 (mg/s)	
mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)	
mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)	
mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00008 (mg/s)	
mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00002 (mg/s)	
mass flux of liner leakage from LOSP	M_gC4LO =	0.00000 (mg/s)	
mass flux of seepage from Overburden (Storage)	M_gOS =	0.00065 (mg/s)	
mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)	
mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)	
mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)	
mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00016 (mg/s)	
mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)	
mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)	
mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)	
mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00006 (mg/s)	
mass flux of surface water into SW-004A	M_s4A =	27.58656 (mg/s)	
mass flux of ground water into SW-004A	M_g4A =	0.05907 (mg/s)	
mass flux of West Pit overflow	M_sms =	#N/A (mg/s)	
mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	- (mg/s)	
mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)	
mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.00089 (mg/s)	
mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	0.00030 (mg/s)	
mass flux of surface water into SW-005	M_s5 =	6.56049 (mg/s)	
mass flux of ground water into SW-005	M_g5 =	0.09636 (mg/s)	
mass flux of surface water into USGS Gage	M_s6 =	0.01165 (mg/s)	
mass flux of ground water into USGS Gage	M_g6 =	0.01995 (mg/s)	
mass flux of surface water into Colby Lake	M_scl =	14.26193 (mg/s)	
mass flux of ground water into Colby Lake	M_gcl =	0.04967 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.01656 (mg/s)	
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	3.6231 (mg/s)
	mass flux in river at SW-002	M_r2 =	7.3743 (mg/s)
	mass flux in river at SW-003	M_r3 =	9.7953 (mg/s)
	mass flux in river at SW-004	M_r4 =	12.3023 (mg/s)
	mass flux in river at SW-004A	M_r4A =	39.9492 (mg/s)
	mass flux in river at SW-005	M_r5 =	46.6060 (mg/s)
mass flux in river at USGS Gage	M_r6 =	46.6376 (mg/s)	
mass flux into Colby Lake	M_cl =	60.9658 (mg/s)	
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C_r1 =	0.00150 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00150 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00150 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00150 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00150 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00150 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00150 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.00150 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 1 Selenium			
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0005 (mg/L)	
	concentration of surface water into SW-002	C s2 =	0.0005 (mg/L)	
	concentration of surface water into SW-003	C s3 =	0.0005 (mg/L)	
	concentration of surface water into SW-004	C s4 =	0.0005 (mg/L)	
	concentration of surface water into SW-004A	C s4A =	0.0005 (mg/L)	
	concentration of surface water into SW-005	C s5 =	0.0005 (mg/L)	
	concentration of surface water into USGS Gage	C s6 =	0.0005 (mg/L)	
	concentration of surface water into Colby Lake	C scl =	0.0005 (mg/L)	
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0005 (mg/L)	
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0005 (mg/L)	
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)	
	concentration of ground water into SW-001	C g1 =	0.0019 (mg/L)	
	concentration of ground water into SW-002	C g2 =	0.0019 (mg/L)	
	concentration of ground water into SW-003	C g3 =	0.0019 (mg/L)	
	concentration of ground water into SW-004	C g4 =	0.0019 (mg/L)	
	concentration of ground water into SW-004A	C g4A =	0.0019 (mg/L)	
	concentration of ground water into SW-005	C g5 =	0.0019 (mg/L)	
	concentration of ground water into USGS Gage	C g6 =	0.0019 (mg/L)	
	concentration of ground water into Colby Lake	C gcl =	0.0019 (mg/L)	
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)	
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)	
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.0029 (mg/L)	
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.0029 (mg/L)	
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0029 (mg/L)	
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0029 (mg/L)	
	concentration of liner leakage from LOSP	C gC4LO =	0.0014 (mg/L)	
	concentration of seepage from Overburden (Storage)	C gOS =	0.0004 (mg/L)	
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.0019 (mg/L)	
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.0029 (mg/L)	
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.0029 (mg/L)	
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.0029 (mg/L)	
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0029 (mg/L)	
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0014 (mg/L)	
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0004 (mg/L)	
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	0.0004 (mg/L)	
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0019 (mg/L)	
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0019 (mg/L)	
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0019 (mg/L)	
	concentration of liner leakage from WWTF ponc	C_gWTFp =	0.0023 (mg/L)	
	Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	1.19101 (mg/s)
		mass flux of ground water into SW-001	M g1 =	0.00973 (mg/s)
		mass flux of surface discharges from upstream of PM-1	M sns =	0.01415 (mg/s)
		mass flux of surface water into SW-002	M s2 =	1.24530 (mg/s)
		mass flux of ground water into SW-002	M g2 =	0.01942 (mg/s)
mass flux of surface water into SW-003		M s3 =	0.80545 (mg/s)	
mass flux of ground water into SW-003		M g3 =	0.00583 (mg/s)	
mass flux of seepage from East Pit to SW-003		M gep_003 =	#N/A (mg/s)	
mass flux of liner leakage from Cat 2/3 stockpile to SW-003		M gC3_003 =	0.00000 (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-003		M gC3LO_003 =	0.00000 (mg/s)	
mass flux of liner leakage from Cat 2/3 sumps to SW-003		M gC3s_003 =	0.00000 (mg/s)	
mass flux of surface water into SW-004		M s4 =	0.83078 (mg/s)	
mass flux of ground water into SW-004		M g4 =	0.01745 (mg/s)	
mass flux of seepage from East Pit to SW-004		M gep_004 =	#N/A (mg/s)	
mass flux of seepage from West Pit		M gwp =	#N/A (mg/s)	
mass flux of liner leakage from Cat 2/3 stockpile to SW-004		M gC3_004 =	- (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-004		M gC3LO_004 =	0.00000 (mg/s)	
mass flux of liner leakage from Cat 4 stockpile		M gC4 =	0.00000 (mg/s)	
mass flux of liner leakage from LOSP		M gC4LO =	0.00001 (mg/s)	
mass flux of seepage from Overburden (Storage)		M gOS =	0.00096 (mg/s)	
mass flux of liner leakage from Cat 3LO sumps to SW-004		M gC3LOs_004 =	0.00000 (mg/s)	
mass flux of liner leakage from Cat 4 sumps		M gC4s =	0.00000 (mg/s)	
mass flux of liner leakage from LOSP sumps		M gC4LOs =	0.00000 (mg/s)	
mass flux of seepage from Overburden Ponds - PW1		M gOp1 =	0.00024 (mg/s)	
mass flux of leakage from Haul Road Pond - PW2		M gHRp2 =	0.00000 (mg/s)	
mass flux of leakage from Haul Road Pond - PW4		M gHRp4 =	0.00000 (mg/s)	
mass flux of leakage from RTH Pond - PW3		M gRTHp =	0.00000 (mg/s)	
mass flux of liner leakage from WWTF pond		M gWTFp =	0.00000 (mg/s)	
mass flux of surface water into SW-004A		M s4A =	9.19552 (mg/s)	
mass flux of ground water into SW-004A		M g4A =	0.07522 (mg/s)	
mass flux of West Pit overflow		M sms =	#N/A (mg/s)	
mass flux of liner leakage from Cat 1 stockpile		M gC12 =	- (mg/s)	
mass flux of liner leakage from Cat 1 sumps		M gC12s =	0.00000 (mg/s)	
mass flux of seepage from Overburden (Cat 1)		M gO12 =	0.00421 (mg/s)	
mass flux of seepage from Overburden Pond - PW7		M gOp7 =	0.00045 (mg/s)	
mass flux of surface water into SW-005		M s5 =	2.18683 (mg/s)	
mass flux of ground water into SW-005		M g5 =	0.12270 (mg/s)	
mass flux of surface water into USGS Gage		M s6 =	0.00388 (mg/s)	
mass flux of ground water into USGS Gage		M g6 =	0.02540 (mg/s)	
mass flux of surface water into Colby Lake		M scl =	4.75398 (mg/s)	
mass flux of ground water into Colby Lake		M gcl =	0.06324 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP		M shl =	0.00552 (mg/s)	
Mass balance at each node		High Flow		
		mass flux in river at SW-001	M r1 =	1.2149 (mg/s)
	mass flux in river at SW-002	M r2 =	2.4796 (mg/s)	
	mass flux in river at SW-003	M r3 =	3.2909 (mg/s)	
	mass flux in river at SW-004	M r4 =	4.1403 (mg/s)	
	mass flux in river at SW-004A	M r4A =	13.4157 (mg/s)	
	mass flux in river at SW-005	M r5 =	15.7253 (mg/s)	
	mass flux in river at USGS Gage	M r6 =	15.7546 (mg/s)	
mass flux into Colby Lake	M cl =	20.5773 (mg/s)		
Convert mass flux to concentration	High Flow			
	concentration in river at SW-001	C r1 =	0.00050 (mg/L)	
	concentration in river at SW-002	C r2 =	0.00050 (mg/L)	
	concentration in river at SW-003	C r3 =	0.00050 (mg/L)	
	concentration in river at SW-004	C r4 =	0.00050 (mg/L)	
	concentration in river at SW-004A	C r4A =	0.00050 (mg/L)	
	concentration in river at SW-005	C r5 =	0.00051 (mg/L)	
	concentration in river at USGS Gage	C r6 =	0.00051 (mg/L)	
concentration in Colby Lake (H)	C cl =	0.00054 (mg/L)		



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 1 Sulfate		
Input concentration data	concentration of surface water into SW-001	C_s1 =	9.0000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	9.0000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	9.0000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	9.0000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	9.0000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	9.0000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	9.0000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	9.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	9.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	22.0000 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	16.1300 (mg/L)
	concentration of ground water into SW-002	C_g2 =	16.1300 (mg/L)
	concentration of ground water into SW-003	C_g3 =	16.1300 (mg/L)
	concentration of ground water into SW-004	C_g4 =	16.1300 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	16.1300 (mg/L)
	concentration of ground water into SW-005	C_g5 =	16.1300 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	16.1300 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	16.1300 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	43.9785 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	878.1511 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	1,177.1989 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	2,340.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	137.5352 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	35.1700 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	68.3000 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	43.9785 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	878.1511 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	1,177.1989 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	2,340.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	137.5352 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	35.1700 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	35.1700 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	16.1300 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	16.1300 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	16.1300 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	202.2758 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	21,438.09900 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	82.16622 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	622.60000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	22,415.38763 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	164.04022 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	14,498.13931 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	49.24122 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.41000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	1.16852 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00071 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	14,954.10118 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	147.38556 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	1.16852 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.60264 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.83628 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	76.11262 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00091 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00164 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00018 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	18.81988 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00614 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.01315 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.43312 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	165,519.36482 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	635.22346 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00096 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	151.35463 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	35.35856 (mg/s)
	mass flux of surface water into SW-005	M_s5 =	39,362.94821 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	1,036.20733 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	69.91498 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	214.54513 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	85,571.55900 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	534.08043 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	99.33300 (mg/s)
Mass balance at each node	mass flux in river at SW-001	M_r1 =	22,142.8652 (mg/s)
	mass flux in river at SW-002	M_r2 =	44,722.2931 (mg/s)
	mass flux in river at SW-003	M_r3 =	59,271.2528 (mg/s)
	mass flux in river at SW-004	M_r4 =	74,470.7354 (mg/s)
	mass flux in river at SW-004A	M_r4A =	240,812.0378 (mg/s)
	mass flux in river at SW-005	M_r5 =	281,211.1933 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	281,495.6535 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	367,700.6259 (mg/s)
	concentration in river at SW-001	C_r1 =	9.16735 (mg/L)
	concentration in river at SW-002	C_r2 =	9.09697 (mg/L)
	concentration in river at SW-003	C_r3 =	9.07658 (mg/L)
	concentration in river at SW-004	C_r4 =	9.07787 (mg/L)
	concentration in river at SW-004A	C_r4A =	9.04044 (mg/L)
	concentration in river at SW-005	C_r5 =	9.04941 (mg/L)
	concentration in river at USGS Gage	C_r6 =	9.05242 (mg/L)
	concentration in Colby Lake (H)	C_cl =	9.29659 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 1	Thallium			
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0004	(mg/L)	
	concentration of surface water into SW-002	C s2 =	0.0004	(mg/L)	
	concentration of surface water into SW-003	C s3 =	0.0004	(mg/L)	
	concentration of surface water into SW-004	C s4 =	0.0004	(mg/L)	
	concentration of surface water into SW-004A	C s4A =	0.0004	(mg/L)	
	concentration of surface water into SW-005	C s5 =	0.0004	(mg/L)	
	concentration of surface water into USGS Gage	C s6 =	0.0004	(mg/L)	
	concentration of surface water into Colby Lake	C scl =	0.0004	(mg/L)	
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0004	(mg/L)	
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0003	(mg/L)	
	concentration of surface water flow from West Pit overflow	C sms =	#N/A	(mg/L)	
	concentration of ground water into SW-001	C g1 =	0.0000	(mg/L)	
	concentration of ground water into SW-002	C g2 =	0.0000	(mg/L)	
	concentration of ground water into SW-003	C g3 =	0.0000	(mg/L)	
	concentration of ground water into SW-004	C g4 =	0.0000	(mg/L)	
	concentration of ground water into SW-004A	C g4A =	0.0000	(mg/L)	
	concentration of ground water into SW-005	C g5 =	0.0000	(mg/L)	
	concentration of ground water into USGS Gage	C g6 =	0.0000	(mg/L)	
	concentration of ground water into Colby Lake	C gcl =	0.0000	(mg/L)	
	concentration of ground water seepage from East Pit	C gep =	#N/A	(mg/L)	
	concentration of ground water seepage from West Pit	C gwp =	#N/A	(mg/L)	
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.0000	(mg/L)	
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.0000	(mg/L)	
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0000	(mg/L)	
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0000	(mg/L)	
	concentration of liner leakage from LOSP	C gC4LO =	0.0000	(mg/L)	
	concentration of seepage from Overburden (Storage)	C gOS =	0.0000	(mg/L)	
	concentration of seepage from Overburden (Cat 1)	C gO12 =	-	(mg/L)	
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.0000	(mg/L)	
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.0000	(mg/L)	
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.0000	(mg/L)	
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0000	(mg/L)	
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0000	(mg/L)	
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0000	(mg/L)	
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	0.0000	(mg/L)	
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0000	(mg/L)	
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0000	(mg/L)	
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0000	(mg/L)	
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0009	(mg/L)	
	Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	0.95280	(mg/s)
		mass flux of ground water into SW-001	M g1 =	0.00002	(mg/s)
		mass flux of surface discharges from upstream of PM-1	M sns =	0.00809	(mg/s)
		mass flux of surface water into SW-002	M s2 =	0.99624	(mg/s)
		mass flux of ground water into SW-002	M g2 =	0.00004	(mg/s)
mass flux of surface water into SW-003		M s3 =	0.64436	(mg/s)	
mass flux of ground water into SW-003		M g3 =	0.00001	(mg/s)	
mass flux of seepage from East Pit to SW-003		M gep_003 =	#N/A	(mg/s)	
mass flux of liner leakage from Cat 2/3 stockpile to SW-003		M gC3_003 =	0.00000	(mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-003		M gC3LO_003 =	0.00000	(mg/s)	
mass flux of liner leakage from Cat 2/3 sumps to SW-003		M gC3s_003 =	0.00000	(mg/s)	
mass flux of surface water into SW-004		M s4 =	0.66463	(mg/s)	
mass flux of ground water into SW-004		M g4 =	0.00004	(mg/s)	
mass flux of seepage from East Pit to SW-004		M gep_004 =	#N/A	(mg/s)	
mass flux of seepage from West Pit		M gwp =	#N/A	(mg/s)	
mass flux of liner leakage from Cat 2/3 stockpile to SW-004		M gC3_004 =	-	(mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-004		M gC3LO_004 =	0.00000	(mg/s)	
mass flux of liner leakage from Cat 4 stockpile		M gC4 =	0.00000	(mg/s)	
mass flux of liner leakage from LOSP		M gC4LO =	0.00000	(mg/s)	
mass flux of seepage from Overburden (Storage)		M gOS =	0.00009	(mg/s)	
mass flux of liner leakage from Cat 3LO sumps to SW-004		M gC3LOs_004 =	0.00000	(mg/s)	
mass flux of liner leakage from Cat 4 sumps		M gC4s =	0.00000	(mg/s)	
mass flux of liner leakage from LOSP sumps		M gC4LOs =	0.00000	(mg/s)	
mass flux of seepage from Overburden Ponds - PW1		M gOp1 =	0.00002	(mg/s)	
mass flux of leakage from Haul Road Pond - PW2		M gHRp2 =	0.00000	(mg/s)	
mass flux of leakage from Haul Road Pond - PW4		M gHRp4 =	0.00000	(mg/s)	
mass flux of leakage from RTH Pond - PW3		M gRTHp =	0.00000	(mg/s)	
mass flux of liner leakage from WWTF pond		M gWTFp =	0.00000	(mg/s)	
mass flux of surface water into SW-004A		M s4A =	7.35642	(mg/s)	
mass flux of ground water into SW-004A		M g4A =	0.00016	(mg/s)	
mass flux of West Pit overflow		M sms =	#N/A	(mg/s)	
mass flux of liner leakage from Cat 1 stockpile		M gC12 =	-	(mg/s)	
mass flux of liner leakage from Cat 1 sumps		M gC12s =	0.00000	(mg/s)	
mass flux of seepage from Overburden (Cat 1)		M gO12 =	-	(mg/s)	
mass flux of seepage from Overburden Pond - PW7		M gOp7 =	0.00004	(mg/s)	
mass flux of surface water into SW-005		M s5 =	1.74946	(mg/s)	
mass flux of ground water into SW-005		M g5 =	0.00026	(mg/s)	
mass flux of surface water into USGS Gage		M s6 =	0.00311	(mg/s)	
mass flux of ground water into USGS Gage		M g6 =	0.00005	(mg/s)	
mass flux of surface water into Colby Lake		M scl =	3.80318	(mg/s)	
mass flux of ground water into Colby Lake		M gcl =	0.00013	(mg/s)	
mass flux of surface water from Hoyt Lakes WWTP		M shl =	0.00441	(mg/s)	
Mass balance at each node		High Flow			
		mass flux in river at SW-001	M r1 =	0.9609	(mg/s)
	mass flux in river at SW-002	M r2 =	1.9572	(mg/s)	
	mass flux in river at SW-003	M r3 =	2.6016	(mg/s)	
	mass flux in river at SW-004	M r4 =	3.2663	(mg/s)	
	mass flux in river at SW-004A	M r4A =	10.6230	(mg/s)	
	mass flux in river at SW-005	M r5 =	12.3727	(mg/s)	
Convert mass flux to concentration	mass flux in river at USGS Gage	M r6 =	12.3758	(mg/s)	
	mass flux into Colby Lake	M cl =	16.1836	(mg/s)	
	High Flow				
	concentration in river at SW-001	C r1 =	0.00040	(mg/L)	
	concentration in river at SW-002	C r2 =	0.00040	(mg/L)	
	concentration in river at SW-003	C r3 =	0.00040	(mg/L)	
	concentration in river at SW-004	C r4 =	0.00040	(mg/L)	
	concentration in river at SW-004A	C r4A =	0.00040	(mg/L)	
	concentration in river at SW-005	C r5 =	0.00040	(mg/L)	
	concentration in river at USGS Gage	C r6 =	0.00040	(mg/L)	
	concentration in Colby Lake (H)	C cl =	0.00039	(mg/L)	

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 1 Vanadium		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0009 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0009 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0009 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0009 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0009 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0009 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0009 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0009 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0009 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0043 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0043 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0043 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0043 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0043 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0043 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0043 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0043 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0043 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.0068 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.2654 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.3558 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0317 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.0003 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0017 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.0014 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.0068 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.2654 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.3558 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0317 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0003 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0017 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	0.0017 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0043 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0043 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0043 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	0.0411 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	2.14381 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.02190 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.12169 (mg/s)
	mass flux of surface water into SW-002	M s2 =	2.24154 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.04373 (mg/s)
	mass flux of surface water into SW-003	M s3 =	1.44981 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.01313 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.00012 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00035 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	1.49541 (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.03929 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00035 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00001 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.00374 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.00093 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00009 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	16.55194 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.16934 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	0.00310 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	0.00174 (mg/s)
	mass flux of surface water into SW-005	M s5 =	3.93629 (mg/s)
	mass flux of ground water into SW-005	M g5 =	0.27624 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	0.00699 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.05719 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	8.55716 (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	0.14238 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.00993 (mg/s)
Mass balance at each node	mass flux in river at SW-001	M r1 =	2.2874 (mg/s)
	mass flux in river at SW-002	M r2 =	4.5727 (mg/s)
	mass flux in river at SW-003	M r3 =	6.0361 (mg/s)
	mass flux in river at SW-004	M r4 =	7.5759 (mg/s)
	mass flux in river at SW-004A	M r4A =	24.3020 (mg/s)
	mass flux in river at SW-005	M r5 =	28.5146 (mg/s)
	mass flux in river at USGS Gage	M r6 =	28.5768 (mg/s)
	mass flux into Colby Lake	M cl =	37.2862 (mg/s)
Convert mass flux to concentration	concentration in river at SW-001	C r1 =	0.00095 (mg/L)
	concentration in river at SW-002	C r2 =	0.00093 (mg/L)
	concentration in river at SW-003	C r3 =	0.00092 (mg/L)
	concentration in river at SW-004	C r4 =	0.00092 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00091 (mg/L)
	concentration in river at SW-005	C r5 =	0.00092 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00092 (mg/L)
	concentration in Colby Lake (H)	C cl =	0.00102 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case	Year 1		
Parameter	Zinc		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0160 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0160 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0160 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0160 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0160 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0160 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0160 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0160 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0620 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0073 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0275 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0275 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0275 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0275 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0275 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0275 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0275 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0275 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.0398 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.0900 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0900 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0900 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	1.5951 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0046 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.0030 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.0398 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.0900 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.0900 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0900 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	1.5951 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0046 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	0.0046 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0275 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0275 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0275 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	0.5679 (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M s1 =	38.11218 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.14009 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.20744 (mg/s)
	mass flux of surface water into SW-002	M s2 =	39.84958 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.27967 (mg/s)
	mass flux of surface water into SW-003	M s3 =	25.77447 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.08395 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.00004 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00009 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	26.58507 (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.25128 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00009 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00002 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00970 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.00987 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.00244 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00001 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00002 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00122 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	294.25665 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	1.08299 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	0.00665 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	0.00458 (mg/s)
	mass flux of surface water into SW-005	M s5 =	69.97857 (mg/s)
	mass flux of ground water into SW-005	M g5 =	1.76663 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	0.12429 (mg/s)
mass flux of ground water into USGS Gage	M g6 =	0.36578 (mg/s)	
mass flux of surface water into Colby Lake	M scl =	152.12722 (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	0.91055 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.68429 (mg/s)	
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M r1 =	38.4597 (mg/s)
	mass flux in river at SW-002	M r2 =	78.5889 (mg/s)
	mass flux in river at SW-003	M r3 =	104.4475 (mg/s)
	mass flux in river at SW-004	M r4 =	131.3072 (mg/s)
	mass flux in river at SW-004A	M r4A =	426.6581 (mg/s)
	mass flux in river at SW-005	M r5 =	498.4033 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M r6 =	498.8934 (mg/s)
	mass flux into Colby Lake	M cl =	652.6154 (mg/s)
	High Flow		
	concentration in river at SW-001	C r1 =	0.01592 (mg/L)
	concentration in river at SW-002	C r2 =	0.01599 (mg/L)
	concentration in river at SW-003	C r3 =	0.01599 (mg/L)
	concentration in river at SW-004	C r4 =	0.01601 (mg/L)
	concentration in river at SW-004A	C r4A =	0.01602 (mg/L)
	concentration in river at SW-005	C r5 =	0.01604 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.01604 (mg/L)
	concentration in Colby Lake (H)	C cl =	0.01638 (mg/L)

***Appendix H.9***  
***Partridge River***  
***Reasonable Alternative***  
***Year 5***

## Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

### FLOWS

Case	Year 5			
Flows	Low Flow Conditions (no surface runoff)			
Total flow in Partridge River	flow in river at SW-001	Q_r1_L =	1.18	(cfs)
	flow in river at SW-002	Q_r2_L =	1.52	(cfs)
	flow in river at SW-003	Q_r3_L =	1.62	(cfs)
	flow in river at SW-004	Q_r4_L =	2.03	(cfs)
	flow in river at SW-004A	Q_r4a_L =	3.51	(cfs)
	flow in river at SW-005	Q_r5_L =	5.78	(cfs)
	flow in river at USGS Gage	Q_r6_L =	6.25	(cfs)
	total flow into Colby Lake	Q_cl_L =	7.81	(cfs)
	flow check	Q_ck_L =	7.81	(cfs)
Input flow data	surface water flow into SW-001	Q_s1_L =	-	(cfs)
	surface water flow into SW-002	Q_s2_L =	-	(cfs)
	surface water flow into SW-003	Q_s3_L =	-	(cfs)
	surface water flow into SW-004	Q_s4_L =	-	(cfs)
	surface water flow into SW-004A	Q_s4a_L =	-	(cfs)
	surface water flow into SW-005	Q_s5_L =	-	(cfs)
	surface water flow into USGS Gage	Q_s6_L =	-	(cfs)
	surface water flow into Colby Lake	Q_scl_L =	-	(cfs)
	surface water inflow from Hoyt Lakes WWTP	Q_shl_L =	0.39	(cfs)
	surface water inflow from discharges upstream of PM-1	Q_sns_L =	1.00	(cfs)
	surface water flow from West Pit overflow	Q_sms_L =	-	(cfs)
	ground water flow into SW-001	Q_g1_L =	0.18	(cfs)
	ground water flow into SW-002	Q_g2_L =	0.34	(cfs)
	ground water flow into SW-003	Q_g3_L =	0.11	(cfs)
	ground water flow into SW-004	Q_g4_L =	0.32	(cfs)
	ground water flow into SW-004A	Q_g4a_L =	1.39	(cfs)
	ground water flow into SW-005	Q_g5_L =	2.27	(cfs)
	ground water flow into USGS Gage	Q_g6_L =	0.47	(cfs)
	ground water flow into Colby Lake	Q_gcl_L =	1.17	(cfs)
	ground water seepage from East Pit to SW-003	Q_gep_003_L =	-	(cfs)
	ground water seepage from East Pit to SW-004	Q_gep_004_L =	-	(cfs)
	ground water seepage from West Pit	Q_gwp_L =	-	(cfs)
	ground water liner leakage from Cat 1 stockpile	Q_gC12_L =	0.0007	(cfs)
	ground water liner leakage from Cat 2/3 stockpile to SW-003	Q_gC3_003_L =	0.0000	(cfs)
	ground water liner leakage from Cat 2/3 stockpile to SW-004	Q_gC3_004_L =	-	(cfs)
	ground water liner leakage from Cat 3LO stockpile to SW-003	Q_gC3LO_003_L =	0.0000	(cfs)
	ground water liner leakage from Cat 3LO stockpile to SW-004	Q_gC3LO_004_L =	0.0000	(cfs)
	ground water liner leakage from Cat 4 stockpile	Q_gC4_L =	0.0000	(cfs)
	ground water liner leakage from LO SP	Q_gC4LO_L =	0.0000	(cfs)
	ground water seepage from Overburden Storage	Q_gOS_L =	0.0765	(cfs)
	ground water seepage from Overburden (Cat 1)	Q_gO12_L =	0.0549	(cfs)
	ground water liner leakage from Cat 1 sumps	Q_gC12s_L =	0.0000	(cfs)
	ground water liner leakage from Cat 2/3 sumps	Q_gC3s_L =	0.0000	(cfs)
	ground water liner leakage from Cat 3LO sumps	Q_gC3LOs_L =	0.0000	(cfs)
	ground water liner leakage from Cat 4 sumps	Q_gC4s_L =	0.0000	(cfs)
	ground water liner leakage from LO SP sumps	Q_gC4LOs_L =	0.0000	(cfs)
	ground water seepage from Overburden pond - PW1	Q_gOp1_L =	0.0189	(cfs)
	ground water seepage from Overburden pond - PW7	Q_gOp7_L =	0.0355	(cfs)
	ground water leakage from Haul Road pond - PW2	Q_gHRp2_L =	0.0000	(cfs)
	ground water leakage from Haul Road pond - PW4	Q_gHRp4_L =	0.0000	(cfs)
	ground water leakage from RTH pond - PW3	Q_gRTHp_L =	0.0000	(cfs)
	ground water liner leakage from WWTF pond	Q_gWTFp_L =	0.000004	(cfs)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case		Year 5	
Parameter		Silver	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0001 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0001 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0001 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0001 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0001 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0001 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0001 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0001 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0001 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0001 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0006 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0006 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0006 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0006 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0006 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0006 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0006 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0006 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0007 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0007 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0007 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0007 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0007 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	- (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0007 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0007 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0007 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0007 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0007 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	- (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	- (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0006 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0006 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0006 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0008 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00280 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.00340 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.00525 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00166 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.00491 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	- (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00000 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.02160 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	- (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.03533 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.00732 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.01821 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00110 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	0.0062 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.0114 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.0131 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.0180 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.0396 (mg/s)
	mass flux in river at SW-005	M_r5 =	0.0750 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	0.0823 (mg/s)
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C_r1 =	0.00019 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00027 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00029 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00031 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00040 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00046 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00046 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.00015 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case		Year 5	
Parameter	Aluminum		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0700 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0700 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0700 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0700 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0700 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0700 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0700 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0700 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0700 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0173 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.1250 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.1250 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.1250 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.1250 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.1250 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.1250 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.1250 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.1250 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	1.6800 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	1.6800 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	1.6800 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	1.6800 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	65.3196 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.4106 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.1400 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	1.6800 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	1.6800 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	1.6800 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	1.6800 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	65.3196 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.4106 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	0.4106 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.1250 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.1250 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.1250 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	5.5520 (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.63675 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.48959 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	1.19246 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.37642 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00103 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00013 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	1.11611 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00013 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00016 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00859 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.88859 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00009 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.21972 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00005 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00010 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00067 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	4.90844 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.03093 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00004 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.21737 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	0.41280 (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	8.03013 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	1.66263 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	4.13888 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.77259 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	1.1263 (mg/s)
	mass flux in river at SW-002	M_r2 =	2.3188 (mg/s)
	mass flux in river at SW-003	M_r3 =	2.5964 (mg/s)
	mass flux in river at SW-004	M_r4 =	4.9306 (mg/s)
	mass flux in river at SW-004A	M_r4A =	10.5002 (mg/s)
	mass flux in river at SW-005	M_r5 =	18.5303 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	20.1829 (mg/s)
	mass flux into Colby Lake	M_cl =	25.1044 (mg/s)
	Low Flow		
	concentration in river at SW-001	C_r1 =	0.03373 (mg/L)
	concentration in river at SW-002	C_r2 =	0.05401 (mg/L)
	concentration in river at SW-003	C_r3 =	0.05869 (mg/L)
	concentration in river at SW-004	C_r4 =	0.08564 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.10561 (mg/L)
	concentration in river at SW-005	C_r5 =	0.11322 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.11411 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.07640 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 5 Arsenic			
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0021 (mg/L)	
	concentration of surface water into SW-002	C s2 =	0.0021 (mg/L)	
	concentration of surface water into SW-003	C s3 =	0.0021 (mg/L)	
	concentration of surface water into SW-004	C s4 =	0.0021 (mg/L)	
	concentration of surface water into SW-004A	C s4A =	0.0021 (mg/L)	
	concentration of surface water into SW-005	C s5 =	0.0021 (mg/L)	
	concentration of surface water into USGS Gage	C s6 =	0.0021 (mg/L)	
	concentration of surface water into Colby Lake	C scl =	0.0021 (mg/L)	
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0021 (mg/L)	
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0065 (mg/L)	
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)	
	concentration of ground water into SW-001	C g1 =	0.0022 (mg/L)	
	concentration of ground water into SW-002	C g2 =	0.0022 (mg/L)	
	concentration of ground water into SW-003	C g3 =	0.0022 (mg/L)	
	concentration of ground water into SW-004	C g4 =	0.0022 (mg/L)	
	concentration of ground water into SW-004A	C g4A =	0.0022 (mg/L)	
	concentration of ground water into SW-005	C g5 =	0.0022 (mg/L)	
	concentration of ground water into USGS Gage	C g6 =	0.0022 (mg/L)	
	concentration of ground water into Colby Lake	C gcl =	0.0022 (mg/L)	
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)	
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)	
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.1186 (mg/L)	
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.7100 (mg/L)	
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.7100 (mg/L)	
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.7100 (mg/L)	
	concentration of liner leakage from LOSP	C gC4LO =	0.0652 (mg/L)	
	concentration of seepage from Overburden (Storage)	C gOS =	0.0016 (mg/L)	
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.0027 (mg/L)	
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.1186 (mg/L)	
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.7100 (mg/L)	
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.7100 (mg/L)	
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.7100 (mg/L)	
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0652 (mg/L)	
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0016 (mg/L)	
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	0.0016 (mg/L)	
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0022 (mg/L)	
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0022 (mg/L)	
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0022 (mg/L)	
	concentration of liner leakage from WWTF ponc	C_gWTFp =	0.1618 (mg/L)	
				Low Flow
	Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	(mg/s)
		mass flux of ground water into SW-001	M g1 =	0.01100 (mg/s)
mass flux of surface discharges from upstream of PM-1		M sns =	0.18395 (mg/s)	
mass flux of surface water into SW-002		M s2 =	(mg/s)	
mass flux of ground water into SW-002		M g2 =	0.02061 (mg/s)	
mass flux of surface water into SW-003		M s3 =	(mg/s)	
mass flux of ground water into SW-003		M g3 =	0.00650 (mg/s)	
mass flux of seepage from East Pit to SW-003		M gep_003 =	#N/A (mg/s)	
mass flux of liner leakage from Cat 2/3 stockpile to SW-003		M gC3_003 =	0.00043 (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-003		M gC3LO_003 =	0.00005 (mg/s)	
mass flux of liner leakage from Cat 2/3 sumps to SW-003		M gC3s_003 =	0.00000 (mg/s)	
mass flux of surface water into SW-004		M s4 =	(mg/s)	
mass flux of ground water into SW-004		M g4 =	0.01929 (mg/s)	
mass flux of seepage from East Pit to SW-004		M gep_004 =	#N/A (mg/s)	
mass flux of seepage from West Pit		M gwp =	#N/A (mg/s)	
mass flux of liner leakage from Cat 2/3 stockpile to SW-004		M gC3_004 =	- (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-004		M gC3LO_004 =	0.00005 (mg/s)	
mass flux of liner leakage from Cat 4 stockpile		M gC4 =	0.00007 (mg/s)	
mass flux of liner leakage from LOSP		M gC4LO =	0.00001 (mg/s)	
mass flux of seepage from Overburden (Storage)		M gOS =	0.00338 (mg/s)	
mass flux of liner leakage from Cat 3LO sumps to SW-004		M gC3LOs_004 =	0.00000 (mg/s)	
mass flux of liner leakage from Cat 4 sumps		M gC4s =	0.00000 (mg/s)	
mass flux of liner leakage from LOSP sumps		M gC4LOs =	0.00000 (mg/s)	
mass flux of seepage from Overburden Ponds - PW1		M gOp1 =	0.00083 (mg/s)	
mass flux of leakage from Haul Road Pond - PW2		M gHRp2 =	0.00000 (mg/s)	
mass flux of leakage from Haul Road Pond - PW4		M gHRp4 =	0.00000 (mg/s)	
mass flux of leakage from RTH Pond - PW3		M gRTHp =	0.00000 (mg/s)	
mass flux of liner leakage from WWTF pond		M gWTFp =	0.00002 (mg/s)	
mass flux of surface water into SW-004A		M s4A =	- (mg/s)	
mass flux of ground water into SW-004A		M g4A =	0.08482 (mg/s)	
mass flux of West Pit overflow		M sms =	#N/A (mg/s)	
mass flux of liner leakage from Cat 1 stockpile		M gC12 =	0.00218 (mg/s)	
mass flux of liner leakage from Cat 1 sumps		M gC12s =	0.00000 (mg/s)	
mass flux of seepage from Overburden (Cat 1)		M gO12 =	0.00419 (mg/s)	
mass flux of seepage from Overburden Pond - PW7		M gOp7 =	0.00157 (mg/s)	
mass flux of surface water into SW-005		M s5 =	- (mg/s)	
mass flux of ground water into SW-005		M g5 =	0.13876 (mg/s)	
mass flux of surface water into USGS Gage		M s6 =	- (mg/s)	
mass flux of ground water into USGS Gage		M g6 =	0.02873 (mg/s)	
mass flux of surface water into Colby Lake		M scl =	- (mg/s)	
mass flux of ground water into Colby Lake		M gcl =	0.07152 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP		M shl =	0.02329 (mg/s)	
			Low Flow	
Mass balance at each node	mass flux in river at SW-001	M r1 =	0.1950 (mg/s)	
	mass flux in river at SW-002	M r2 =	0.2156 (mg/s)	
	mass flux in river at SW-003	M r3 =	0.2226 (mg/s)	
	mass flux in river at SW-004	M r4 =	0.2462 (mg/s)	
	mass flux in river at SW-004A	M r4A =	0.3390 (mg/s)	
	mass flux in river at SW-005	M r5 =	0.4777 (mg/s)	
	mass flux in river at USGS Gage	M r6 =	0.5065 (mg/s)	
	mass flux into Colby Lake	M cl =	0.6013 (mg/s)	
Convert mass flux to concentration	concentration in river at SW-001	C r1 =	0.00584 (mg/L)	
	concentration in river at SW-002	C r2 =	0.00502 (mg/L)	
	concentration in river at SW-003	C r3 =	0.00484 (mg/L)	
	concentration in river at SW-004	C r4 =	0.00428 (mg/L)	
	concentration in river at SW-004A	C r4A =	0.00341 (mg/L)	
	concentration in river at SW-005	C r5 =	0.00292 (mg/L)	
	concentration in river at USGS Gage	C r6 =	0.00286 (mg/L)	
	concentration in Colby Lake (H)	C cl =	0.00220 (mg/L)	

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 5 Boron		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0450 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0450 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0450 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0450 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0450 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0450 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0450 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0450 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0450 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0960 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0870 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0870 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0870 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0870 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0870 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0870 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0870 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0870 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.4440 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.7600 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.7600 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.7600 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.7600 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0622 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.0370 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.4440 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.7600 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.7600 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.7600 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.7600 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0622 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	0.0622 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0870 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0870 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0870 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	0.3282 (mg/L)
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Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 5 Barium		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0077 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0077 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0077 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0077 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0077 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0077 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0077 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0077 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0077 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0050 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0219 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0219 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0219 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0219 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0219 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0219 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0219 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0219 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.1900 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.1900 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.1900 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.1900 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.1900 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0168 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.0140 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.1900 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.1900 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.1900 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.1900 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.1900 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0168 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	0.0168 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0219 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0219 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0219 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	0.0969 (mg/L)
			Low Flow
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	(mg/s)
	mass flux of ground water into SW-001	M g1 =	0.11166 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.14150 (mg/s)
	mass flux of surface water into SW-002	M s2 =	(mg/s)
	mass flux of ground water into SW-002	M g2 =	0.20911 (mg/s)
	mass flux of surface water into SW-003	M s3 =	(mg/s)
	mass flux of ground water into SW-003	M g3 =	0.06601 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep 003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3 003 =	0.00012 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO 003 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s 003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	(mg/s)
	mass flux of ground water into SW-004	M g4 =	0.19572 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep 004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3 004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO 004 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00002 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00002 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.03643 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs 004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.00901 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00001 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00002 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00001 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.86074 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	0.00350 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	0.02174 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	0.01692 (mg/s)
	mass flux of surface water into SW-005	M s5 =	- (mg/s)
	mass flux of ground water into SW-005	M g5 =	1.40816 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.29156 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	- (mg/s)
mass flux of ground water into Colby Lake	M gcl =	0.72579 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.08476 (mg/s)	
			Low Flow
Mass balance at each node	mass flux in river at SW-001	M r1 =	0.2532 (mg/s)
	mass flux in river at SW-002	M r2 =	0.4623 (mg/s)
	mass flux in river at SW-003	M r3 =	0.5284 (mg/s)
	mass flux in river at SW-004	M r4 =	0.7697 (mg/s)
	mass flux in river at SW-004A	M r4A =	1.6726 (mg/s)
	mass flux in river at SW-005	M r5 =	3.0807 (mg/s)
	mass flux in river at USGS Gage	M r6 =	3.3723 (mg/s)
mass flux into Colby Lake	M cl =	4.1828 (mg/s)	
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C r1 =	0.00758 (mg/L)
	concentration in river at SW-002	C r2 =	0.01077 (mg/L)
	concentration in river at SW-003	C r3 =	0.01150 (mg/L)
	concentration in river at SW-004	C r4 =	0.01337 (mg/L)
	concentration in river at SW-004A	C r4A =	0.01682 (mg/L)
	concentration in river at SW-005	C r5 =	0.01882 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.01906 (mg/L)
concentration in Colby Lake (H)	C cl =	0.00933 (mg/L)	

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case		Year 5	
Parameter		Beryllium	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0001 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0001 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0001 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0001 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0001 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0001 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0001 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0001 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0001 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0001 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0001 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0001 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0001 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0001 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0001 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0001 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0001 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0001 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0002 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0002 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0023 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	- (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0002 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0002 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0023 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	- (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	- (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0001 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0001 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0001 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0004 (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00074 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.00283 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.00138 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00044 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.00129 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	- (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00000 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.00569 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	- (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.00931 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.00193 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.00480 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00110 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	0.0036 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.0050 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.0054 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.0067 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.0124 (mg/s)
	mass flux in river at SW-005	M_r5 =	0.0217 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	0.0236 (mg/s)
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C_r1 =	0.00011 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00012 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00012 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00012 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00012 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00013 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00013 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.00010 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 5 Calcium		
Input concentration data	concentration of surface water into SW-001	C s1 =	17.0000 (mg/L)
	concentration of surface water into SW-002	C s2 =	17.0000 (mg/L)
	concentration of surface water into SW-003	C s3 =	17.0000 (mg/L)
	concentration of surface water into SW-004	C s4 =	17.0000 (mg/L)
	concentration of surface water into SW-004A	C s4A =	17.0000 (mg/L)
	concentration of surface water into SW-005	C s5 =	17.0000 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	17.0000 (mg/L)
	concentration of surface water into Colby Lake	C scl =	17.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	17.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	24.5000 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	14.7900 (mg/L)
	concentration of ground water into SW-002	C g2 =	14.7900 (mg/L)
	concentration of ground water into SW-003	C g3 =	14.7900 (mg/L)
	concentration of ground water into SW-004	C g4 =	14.7900 (mg/L)
	concentration of ground water into SW-004A	C g4A =	14.7900 (mg/L)
	concentration of ground water into SW-005	C g5 =	14.7900 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	14.7900 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	14.7900 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	540.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	540.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	540.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	540.0000 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	297.8749 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	9.3700 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	15.8000 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	540.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	540.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	540.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	540.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	297.8749 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	9.3700 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	9.3700 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	14.7900 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	14.7900 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	14.7900 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	235.9438 (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M s1 =	(mg/s)
	mass flux of ground water into SW-001	M g1 =	75.34026 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	693.35000 (mg/s)
	mass flux of surface water into SW-002	M s2 =	(mg/s)
	mass flux of ground water into SW-002	M g2 =	141.09146 (mg/s)
	mass flux of surface water into SW-003	M s3 =	(mg/s)
	mass flux of ground water into SW-003	M g3 =	44.53811 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.32984 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.04154 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00044 (mg/s)
	mass flux of surface water into SW-004	M s4 =	(mg/s)
	mass flux of ground water into SW-004	M g4 =	132.05814 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.04154 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.05211 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.03919 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	20.27794 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00042 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00038 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00040 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	5.01400 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00563 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.01206 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.02842 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M g4A =	580.76605 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	9.94038 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.01183 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	24.53209 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	9.42024 (mg/s)
	mass flux of surface water into SW-005	M s5 =	- (mg/s)
	mass flux of ground water into SW-005	M g5 =	950.12439 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	- (mg/s)
mass flux of ground water into USGS Gage	M g6 =	196.72179 (mg/s)	
mass flux of surface water into Colby Lake	M scl =	- (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	489.71169 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	187.62900 (mg/s)	
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M r1 =	768.6903 (mg/s)
	mass flux in river at SW-002	M r2 =	909.7817 (mg/s)
	mass flux in river at SW-003	M r3 =	954.6916 (mg/s)
	mass flux in river at SW-004	M r4 =	1,112.2223 (mg/s)
	mass flux in river at SW-004A	M r4A =	1,736.8929 (mg/s)
	mass flux in river at SW-005	M r5 =	2,687.0173 (mg/s)
	mass flux in river at USGS Gage	M r6 =	2,853.7391 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M cl =	3,561.0798 (mg/s)
	Low Flow		
	concentration in river at SW-001	C r1 =	23.01881 (mg/L)
	concentration in river at SW-002	C r2 =	21.19041 (mg/L)
	concentration in river at SW-003	C r3 =	20.77869 (mg/L)
	concentration in river at SW-004	C r4 =	19.31765 (mg/L)
	concentration in river at SW-004A	C r4A =	17.47036 (mg/L)
	concentration in river at SW-005	C r5 =	16.41825 (mg/L)
	concentration in river at USGS Gage	C r6 =	16.29587 (mg/L)
	concentration in Colby Lake (H	C cl =	16.86850 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case		Year 5	
Parameter		Cadmium	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0001 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0001 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0001 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0001 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0001 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0001 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0001 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0001 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0001 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0001 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0001 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0001 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0001 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0001 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0001 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0001 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0001 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0001 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0002 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0002 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0149 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0001 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0002 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0002 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0149 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0001 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	0.0001 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0001 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0001 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0001 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0014 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00051 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.00283 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.00095 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00030 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.00089 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00013 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00003 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00000 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.00393 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	0.00006 (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.00642 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.00133 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.00331 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00110 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	0.0033 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.0043 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.0046 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.0057 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.0096 (mg/s)
	mass flux in river at SW-005	M_r5 =	0.0161 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	0.0174 (mg/s)
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C_r1 =	0.00010 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00010 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00010 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00010 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00010 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00010 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00010 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.00010 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 5 Chloride		
Input concentration data	concentration of surface water into SW-001	C s1 =	8.0000 (mg/L)
	concentration of surface water into SW-002	C s2 =	8.0000 (mg/L)
	concentration of surface water into SW-003	C s3 =	8.0000 (mg/L)
	concentration of surface water into SW-004	C s4 =	8.0000 (mg/L)
	concentration of surface water into SW-004A	C s4A =	8.0000 (mg/L)
	concentration of surface water into SW-005	C s5 =	8.0000 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	8.0000 (mg/L)
	concentration of surface water into Colby Lake	C scl =	8.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	8.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	1.6000 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	6.6000 (mg/L)
	concentration of ground water into SW-002	C g2 =	6.6000 (mg/L)
	concentration of ground water into SW-003	C g3 =	6.6000 (mg/L)
	concentration of ground water into SW-004	C g4 =	6.6000 (mg/L)
	concentration of ground water into SW-004A	C g4A =	6.6000 (mg/L)
	concentration of ground water into SW-005	C g5 =	6.6000 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	6.6000 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	6.6000 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	107.5915 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	82.6859 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	71.7245 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	15.8154 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.8896 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	5.3500 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	2.3300 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	107.5915 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	82.6859 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	71.7245 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	15.8154 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4Os =	0.8896 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	5.3500 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	5.3500 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	6.6000 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	6.6000 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	6.6000 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	32.8400 (mg/L)
			Low Flow
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	(mg/s)
	mass flux of ground water into SW-001	M g1 =	33.62040 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	45.28000 (mg/s)
	mass flux of surface water into SW-002	M s2 =	(mg/s)
	mass flux of ground water into SW-002	M g2 =	62.96171 (mg/s)
	mass flux of surface water into SW-003	M s3 =	(mg/s)
	mass flux of ground water into SW-003	M g3 =	19.87502 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep 003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3 003 =	0.05051 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO 003 =	0.00552 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s 003 =	0.00007 (mg/s)
	mass flux of surface water into SW-004	M s4 =	(mg/s)
	mass flux of ground water into SW-004	M g4 =	58.93061 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep 004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3 004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO 004 =	0.00552 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00153 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00012 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	11.57812 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs 004 =	0.00006 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00001 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4Os =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	2.86285 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00251 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00538 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00396 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M g4A =	259.16538 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	1.98056 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00236 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	3.61771 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	5.37868 (mg/s)
	mass flux of surface water into SW-005	M s5 =	- (mg/s)
	mass flux of ground water into SW-005	M g5 =	423.99060 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	87.78660 (mg/s)
mass flux of surface water into Colby Lake	M scl =	- (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	218.53260 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	88.29600 (mg/s)	
			Low Flow
Mass balance at each node	mass flux in river at SW-001	M r1 =	78.9004 (mg/s)
	mass flux in river at SW-002	M r2 =	141.8621 (mg/s)
	mass flux in river at SW-003	M r3 =	161.7932 (mg/s)
	mass flux in river at SW-004	M r4 =	235.1839 (mg/s)
	mass flux in river at SW-004A	M r4A =	505.3286 (mg/s)
	mass flux in river at SW-005	M r5 =	929.3192 (mg/s)
	mass flux in river at USGS Gage	M r6 =	1,017.1058 (mg/s)
	mass flux into Colby Lake	M cl =	1,323.9344 (mg/s)
			Low Flow
Convert mass flux to concentration	concentration in river at SW-001	C r1 =	2.36271 (mg/L)
	concentration in river at SW-002	C r2 =	3.30422 (mg/L)
	concentration in river at SW-003	C r3 =	3.52140 (mg/L)
	concentration in river at SW-004	C r4 =	4.08479 (mg/L)
	concentration in river at SW-004A	C r4A =	5.08280 (mg/L)
	concentration in river at SW-005	C r5 =	5.67834 (mg/L)
	concentration in river at USGS Gage	C r6 =	5.74761 (mg/L)
	concentration in Colby Lake (H)	C cl =	7.70397 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 5 Cobalt		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0005 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0005 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0005 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0005 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0005 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0005 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0005 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0005 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0005 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0005 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0017 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0017 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0017 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0017 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0017 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0017 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0017 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0017 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.0180 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.0520 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0520 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0520 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	3.5958 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0011 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.0013 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.0180 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.0520 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.0520 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0520 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	3.5958 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0011 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	0.0011 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0017 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0017 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0017 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	0.2860 (mg/L)
			Low Flow
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	(mg/s)
	mass flux of ground water into SW-001	M g1 =	0.00841 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.01415 (mg/s)
	mass flux of surface water into SW-002	M s2 =	(mg/s)
	mass flux of ground water into SW-002	M g2 =	0.01574 (mg/s)
	mass flux of surface water into SW-003	M s3 =	(mg/s)
	mass flux of ground water into SW-003	M g3 =	0.00497 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.00003 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	(mg/s)
	mass flux of ground water into SW-004	M g4 =	0.01473 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00001 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00047 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.00240 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.00059 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00003 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.06479 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	0.00033 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	0.00202 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	0.00112 (mg/s)
	mass flux of surface water into SW-005	M s5 =	- (mg/s)
	mass flux of ground water into SW-005	M g5 =	0.10600 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.02195 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	0.05463 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.00552 (mg/s)
			Low Flow
Mass balance at each node	mass flux in river at SW-001	M r1 =	0.0226 (mg/s)
	mass flux in river at SW-002	M r2 =	0.0383 (mg/s)
	mass flux in river at SW-003	M r3 =	0.0433 (mg/s)
	mass flux in river at SW-004	M r4 =	0.0616 (mg/s)
	mass flux in river at SW-004A	M r4A =	0.1298 (mg/s)
	mass flux in river at SW-005	M r5 =	0.2358 (mg/s)
	mass flux in river at USGS Gage	M r6 =	0.2578 (mg/s)
mass flux into Colby Lake	M cl =	0.3179 (mg/s)	
Convert mass flux to concentration	concentration in river at SW-001	C r1 =	0.00068 (mg/L)
	concentration in river at SW-002	C r2 =	0.00089 (mg/L)
	concentration in river at SW-003	C r3 =	0.00094 (mg/L)
	concentration in river at SW-004	C r4 =	0.00107 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00131 (mg/L)
	concentration in river at SW-005	C r5 =	0.00144 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00146 (mg/L)
	concentration in Colby Lake (H)	C cl =	0.00064 (mg/L)

Case Parameter	Year 5 Copper
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			Low Flow
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	(mg/s)
	mass flux of ground water into SW-001	M g1 =	0.01503 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.03509 (mg/s)
	mass flux of surface water into SW-002	M s2 =	- (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.02814 (mg/s)
	mass flux of surface water into SW-003	M s3 =	- (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.00888 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gc3_003 =	0.00006 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gc3LO_003 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	- (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.02634 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gc3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gc3LO_004 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00001 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00011 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.04640 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gc3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.01147 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00001 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.11584 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	0.00169 (mg/s)
mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00000 (mg/s)	
mass flux of seepage from Overburden (Cat 1)	M gO12 =	0.02640 (mg/s)	
mass flux of seepage from Overburden Pond - PW7	M gOp7 =	0.02155 (mg/s)	
mass flux of surface water into SW-005	M s5 =	- (mg/s)	
mass flux of ground water into SW-005	M g5 =	0.18951 (mg/s)	
mass flux of surface water into USGS Gage	M s6 =	- (mg/s)	
mass flux of ground water into USGS Gage	M g6 =	0.03924 (mg/s)	
mass flux of surface water into Colby Lake	M scl =	- (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	0.09768 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.20970 (mg/s)	
			Low Flow
Mass balance at each node	mass flux in river at SW-001	M r1 =	0.0501 (mg/s)
	mass flux in river at SW-002	M r2 =	0.0783 (mg/s)
	mass flux in river at SW-003	M r3 =	0.0872 (mg/s)
	mass flux in river at SW-004	M r4 =	0.1716 (mg/s)
	mass flux in river at SW-004A	M r4A =	0.3371 (mg/s)
	mass flux in river at SW-005	M r5 =	0.5266 (mg/s)
	mass flux in river at USGS Gage	M r6 =	0.9658 (mg/s)
	mass flux into Colby Lake	M cl =	0.8732 (mg/s)
			Low Flow
Convert mass flux to concentration	concentration in river at SW-001	C r1 =	0.00150 (mg/L)
	concentration in river at SW-002	C r2 =	0.00182 (mg/L)
	concentration in river at SW-003	C r3 =	0.00190 (mg/L)
	concentration in river at SW-004	C r4 =	0.00298 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00339 (mg/L)
	concentration in river at SW-005	C r5 =	0.00322 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00320 (mg/L)
	concentration in Colby Lake (H)	C cl =	0.00203 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 5 Fluoride		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0700 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0700 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0700 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0700 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0700 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0700 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0700 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0700 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0700 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.1400 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.2800 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.2800 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.2800 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.2800 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.2800 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.2800 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.2800 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.2800 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.0621 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.0621 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0621 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0621 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.0625 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.2239 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.4200 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.0621 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.0621 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.0621 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0621 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0625 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.2239 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	0.2239 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.2800 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.2800 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.2800 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	0.1706 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	(mg/s)
	mass flux of ground water into SW-001	M g1 =	1.42632 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	3.96200 (mg/s)
	mass flux of surface water into SW-002	M s2 =	(mg/s)
	mass flux of ground water into SW-002	M g2 =	2.67110 (mg/s)
	mass flux of surface water into SW-003	M s3 =	(mg/s)
	mass flux of ground water into SW-003	M g3 =	0.84318 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.00004 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	(mg/s)
	mass flux of ground water into SW-004	M g4 =	2.50009 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00001 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.48453 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.11981 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00011 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00023 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00002 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M g4A =	10.99489 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	0.00114 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	0.65212 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	0.22509 (mg/s)
	mass flux of surface water into SW-005	M s5 =	- (mg/s)
	mass flux of ground water into SW-005	M g5 =	17.98748 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	3.72428 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	9.27108 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.77259 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M r1 =	5.3883 (mg/s)
	mass flux in river at SW-002	M r2 =	8.0594 (mg/s)
	mass flux in river at SW-003	M r3 =	8.9026 (mg/s)
	mass flux in river at SW-004	M r4 =	12.0074 (mg/s)
	mass flux in river at SW-004A	M r4A =	23.8807 (mg/s)
	mass flux in river at SW-005	M r5 =	41.8662 (mg/s)
	mass flux in river at USGS Gage	M r6 =	45.5925 (mg/s)
mass flux into Colby Lake	M cl =	55.6361 (mg/s)	
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C r1 =	0.16136 (mg/L)
	concentration in river at SW-002	C r2 =	0.18772 (mg/L)
	concentration in river at SW-003	C r3 =	0.19376 (mg/L)
	concentration in river at SW-004	C r4 =	0.20855 (mg/L)
	concentration in river at SW-004A	C r4A =	0.24020 (mg/L)
	concentration in river at SW-005	C r5 =	0.25582 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.25764 (mg/L)
concentration in Colby Lake (H	C cl =	0.09671 (mg/L)	

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case		Year 5	
Parameter		Iron	
Input concentration data	concentration of surface water into SW-001	C_s1 =	1.6000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	1.6000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	1.6000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	1.6000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	1.6000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	1.6000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	1.6000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	1.6000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	1.6000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0300 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	2.8440 (mg/L)
	concentration of ground water into SW-002	C_g2 =	2.8440 (mg/L)
	concentration of ground water into SW-003	C_g3 =	2.8440 (mg/L)
	concentration of ground water into SW-004	C_g4 =	2.8440 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	2.8440 (mg/L)
	concentration of ground water into SW-005	C_g5 =	2.8440 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	2.8440 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	2.8440 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.8100 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.8100 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.8100 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.8100 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	235.0000 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.2255 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.1500 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.8100 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.8100 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.8100 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.8100 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	235.0000 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.2255 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	0.2255 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	2.8440 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	2.8440 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	2.8440 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	18.6742 (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	14.48734 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.84900 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	27.13077 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	8.56433 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00049 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00006 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	25.39374 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00006 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00008 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.03092 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.48801 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00031 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.12067 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00108 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00232 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00225 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	111.67672 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.01491 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00002 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.23290 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	0.22671 (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	182.70140 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	37.82804 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	94.16768 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	17.65920 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	15.3363 (mg/s)
	mass flux in river at SW-002	M_r2 =	42.4671 (mg/s)
	mass flux in river at SW-003	M_r3 =	51.0320 (mg/s)
	mass flux in river at SW-004	M_r4 =	77.0714 (mg/s)
	mass flux in river at SW-004A	M_r4A =	189.2227 (mg/s)
	mass flux in river at SW-005	M_r5 =	371.5241 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	409.7521 (mg/s)
	mass flux into Colby Lake	M_cl =	521.5790 (mg/s)
	Low Flow		
	concentration in river at SW-001	C_r1 =	0.45925 (mg/L)
	concentration in river at SW-002	C_r2 =	0.98913 (mg/L)
	concentration in river at SW-003	C_r3 =	1.11070 (mg/L)
	concentration in river at SW-004	C_r4 =	1.33862 (mg/L)
	concentration in river at SW-004A	C_r4A =	1.90328 (mg/L)
	concentration in river at SW-005	C_r5 =	2.27254 (mg/L)
	concentration in river at USGS Gage	C_r6 =	2.31549 (mg/L)
	concentration in Colby Lake (H)	C_cl =	1.71140 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 5 Hardness		
Input concentration data	concentration of surface water into SW-001	C s1 =	110.0000 (mg/L)
	concentration of surface water into SW-002	C s2 =	110.0000 (mg/L)
	concentration of surface water into SW-003	C s3 =	110.0000 (mg/L)
	concentration of surface water into SW-004	C s4 =	110.0000 (mg/L)
	concentration of surface water into SW-004A	C s4A =	110.0000 (mg/L)
	concentration of surface water into SW-005	C s5 =	110.0000 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	110.0000 (mg/L)
	concentration of surface water into Colby Lake	C scl =	110.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	110.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	110.0000 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	66.4200 (mg/L)
	concentration of ground water into SW-002	C g2 =	66.4200 (mg/L)
	concentration of ground water into SW-003	C g3 =	66.4200 (mg/L)
	concentration of ground water into SW-004	C g4 =	66.4200 (mg/L)
	concentration of ground water into SW-004A	C g4A =	66.4200 (mg/L)
	concentration of ground water into SW-005	C g5 =	66.4200 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	66.4200 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	66.4200 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	1,729.3495 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	1,729.3495 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	1,729.3495 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	1,729.3495 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	2,586.9832 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	43.5200 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	71.5000 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	1,729.3495 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	1,729.3495 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	1,729.3495 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	1,729.3495 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	2,586.9832 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	43.5200 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	43.5200 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	66.4200 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	66.4200 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	66.4200 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	886.8372 (mg/L)
	Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =
mass flux of ground water into SW-001		M g1 =	338.34348 (mg/s)
mass flux of surface discharges from upstream of PM-1		M sns =	3,113.00000 (mg/s)
mass flux of surface water into SW-002		M s2 =	(mg/s)
mass flux of ground water into SW-002		M g2 =	633.62374 (mg/s)
mass flux of surface water into SW-003		M s3 =	(mg/s)
mass flux of ground water into SW-003		M g3 =	200.01496 (mg/s)
mass flux of seepage from East Pit to SW-003		M gep_003 =	#N/A (mg/s)
mass flux of liner leakage from Cat 2/3 stockpile to SW-003		M gC3_003 =	1.05630 (mg/s)
mass flux of liner leakage from Cat 3LO stockpile to SW-003		M gC3LO_003 =	0.13303 (mg/s)
mass flux of liner leakage from Cat 2/3 sumps to SW-003		M gC3s_003 =	0.00139 (mg/s)
mass flux of surface water into SW-004		M s4 =	(mg/s)
mass flux of ground water into SW-004		M g4 =	593.05624 (mg/s)
mass flux of seepage from East Pit to SW-004		M gep_004 =	#N/A (mg/s)
mass flux of seepage from West Pit		M gwp =	#N/A (mg/s)
mass flux of liner leakage from Cat 2/3 stockpile to SW-004		M gC3_004 =	- (mg/s)
mass flux of liner leakage from Cat 3LO stockpile to SW-004		M gC3LO_004 =	0.13303 (mg/s)
mass flux of liner leakage from Cat 4 stockpile		M gC4 =	0.16688 (mg/s)
mass flux of liner leakage from LOSP		M gC4LO =	0.34036 (mg/s)
mass flux of seepage from Overburden (Storage)		M gOS =	94.18314 (mg/s)
mass flux of liner leakage from Cat 3LO sumps to SW-004		M gC3LOs_004 =	0.00133 (mg/s)
mass flux of liner leakage from Cat 4 sumps		M gC4s =	0.00121 (mg/s)
mass flux of liner leakage from LOSP sumps		M gC4LOs =	0.00345 (mg/s)
mass flux of seepage from Overburden Ponds - PW1		M gOp1 =	23.28806 (mg/s)
mass flux of leakage from Haul Road Pond - PW2		M gHRp2 =	0.02527 (mg/s)
mass flux of leakage from Haul Road Pond - PW4		M gHRp4 =	0.05414 (mg/s)
mass flux of leakage from RTH Pond - PW3		M gRTHp =	0.00002 (mg/s)
mass flux of liner leakage from WWTF pond		M gWTFp =	0.10682 (mg/s)
mass flux of surface water into SW-004A		M s4A =	- (mg/s)
mass flux of ground water into SW-004A		M g4A =	2,608.14612 (mg/s)
mass flux of West Pit overflow		M sms =	#N/A (mg/s)
mass flux of liner leakage from Cat 1 stockpile		M gC12 =	31.83406 (mg/s)
mass flux of liner leakage from Cat 1 sumps		M gC12s =	0.03789 (mg/s)
mass flux of seepage from Overburden (Cat 1)		M gO12 =	111.01548 (mg/s)
mass flux of seepage from Overburden Pond - PW7		M gOp7 =	43.75333 (mg/s)
mass flux of surface water into SW-005		M s5 =	- (mg/s)
mass flux of ground water into SW-005		M g5 =	4,266.88722 (mg/s)
mass flux of surface water into USGS Gage		M s6 =	- (mg/s)
mass flux of ground water into USGS Gage		M g6 =	883.45242 (mg/s)
mass flux of surface water into Colby Lake		M scl =	- (mg/s)
mass flux of ground water into Colby Lake	M gcl =	2,199.23262 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	1,214.07000 (mg/s)	
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M r1 =	3,451.3435 (mg/s)
	mass flux in river at SW-002	M r2 =	4,084.9672 (mg/s)
	mass flux in river at SW-003	M r3 =	4,286.1729 (mg/s)
	mass flux in river at SW-004	M r4 =	4,997.5342 (mg/s)
	mass flux in river at SW-004A	M r4A =	7,792.3211 (mg/s)
	mass flux in river at SW-005	M r5 =	12,059.2083 (mg/s)
	mass flux in river at USGS Gage	M r6 =	12,942.6608 (mg/s)
mass flux into Colby Lake	M cl =	16,355.9634 (mg/s)	
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C r1 =	103.35220 (mg/L)
	concentration in river at SW-002	C r2 =	95.14604 (mg/L)
	concentration in river at SW-003	C r3 =	93.28778 (mg/L)
	concentration in river at SW-004	C r4 =	86.79973 (mg/L)
	concentration in river at SW-004A	C r4A =	78.37828 (mg/L)
	concentration in river at SW-005	C r5 =	73.68434 (mg/L)
	concentration in river at USGS Gage	C r6 =	73.13833 (mg/L)
concentration in Colby Lake (H)	C cl =	104.70432 (mg/L)	

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 5 Potassium		
Input concentration data	concentration of surface water into SW-001	C s1 =	1.3000 (mg/L)
	concentration of surface water into SW-002	C s2 =	1.3000 (mg/L)
	concentration of surface water into SW-003	C s3 =	1.3000 (mg/L)
	concentration of surface water into SW-004	C s4 =	1.3000 (mg/L)
	concentration of surface water into SW-004A	C s4A =	1.3000 (mg/L)
	concentration of surface water into SW-005	C s5 =	1.3000 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	1.3000 (mg/L)
	concentration of surface water into Colby Lake	C scl =	1.3000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	1.3000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	2.7000 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	1.7500 (mg/L)
	concentration of ground water into SW-002	C g2 =	1.7500 (mg/L)
	concentration of ground water into SW-003	C g3 =	1.7500 (mg/L)
	concentration of ground water into SW-004	C g4 =	1.7500 (mg/L)
	concentration of ground water into SW-004A	C g4A =	1.7500 (mg/L)
	concentration of ground water into SW-005	C g5 =	1.7500 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	1.7500 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	1.7500 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	49.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	49.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	49.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	49.0000 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	38.0000 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	2.2600 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	4.4500 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	49.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	49.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	49.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	49.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	38.0000 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	2.2600 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	2.2600 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	1.7500 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	1.7500 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	1.7500 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	22.2394 (mg/L)
Convert concentration to mass flux			Low Flow
	mass flux of surface water into SW-001	M s1 =	(mg/s)
	mass flux of ground water into SW-001	M g1 =	8.91450 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	76.41000 (mg/s)
	mass flux of surface water into SW-002	M s2 =	(mg/s)
	mass flux of ground water into SW-002	M g2 =	16.69439 (mg/s)
	mass flux of surface water into SW-003	M s3 =	(mg/s)
	mass flux of ground water into SW-003	M g3 =	5.26989 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep 003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3 003 =	0.02993 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO 003 =	0.00377 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s 003 =	0.00004 (mg/s)
	mass flux of surface water into SW-004	M s4 =	(mg/s)
	mass flux of ground water into SW-004	M g4 =	15.62554 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep 004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3 004 =	(mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO 004 =	0.00377 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00473 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00500 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	4.89094 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs 004 =	0.00004 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00003 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00005 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	1.20935 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00067 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00143 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00268 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	(mg/s)
	mass flux of ground water into SW-004A	M g4A =	68.71809 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	0.90200 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00107 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	6.90936 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	2.27212 (mg/s)
	mass flux of surface water into SW-005	M s5 =	(mg/s)
	mass flux of ground water into SW-005	M g5 =	112.42175 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	(mg/s)
	mass flux of ground water into USGS Gage	M g6 =	23.27675 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	(mg/s)
	mass flux of ground water into Colby Lake	M gcl =	57.94425 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl =	14.34810 (mg/s)
Mass balance at each node			Low Flow
	mass flux in river at SW-001	M r1 =	85.3245 (mg/s)
	mass flux in river at SW-002	M r2 =	102.0189 (mg/s)
	mass flux in river at SW-003	M r3 =	107.3225 (mg/s)
	mass flux in river at SW-004	M r4 =	129.0668 (mg/s)
	mass flux in river at SW-004A	M r4A =	207.8694 (mg/s)
	mass flux in river at SW-005	M r5 =	320.2912 (mg/s)
	mass flux in river at USGS Gage	M r6 =	343.5679 (mg/s)
mass flux into Colby Lake	M cl =	415.8603 (mg/s)	
Convert mass flux to concentration			Low Flow
	concentration in river at SW-001	C r1 =	2.55508 (mg/L)
	concentration in river at SW-002	C r2 =	2.37620 (mg/L)
	concentration in river at SW-003	C r3 =	2.33586 (mg/L)
	concentration in river at SW-004	C r4 =	2.24170 (mg/L)
	concentration in river at SW-004A	C r4A =	2.09083 (mg/L)
	concentration in river at SW-005	C r5 =	1.95705 (mg/L)
	concentration in river at USGS Gage	C r6 =	1.94149 (mg/L)
	concentration in Colby Lake (H	C cl =	1.38555 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case		Year 5	
Parameter		Magnesium	
Input concentration data	concentration of surface water into SW-001	C_s1 =	8.0000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	8.0000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	8.0000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	8.0000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	8.0000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	8.0000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	8.0000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	8.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	8.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	10.5000 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	8.0200 (mg/L)
	concentration of ground water into SW-002	C_g2 =	8.0200 (mg/L)
	concentration of ground water into SW-003	C_g3 =	8.0200 (mg/L)
	concentration of ground water into SW-004	C_g4 =	8.0200 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	8.0200 (mg/L)
	concentration of ground water into SW-005	C_g5 =	8.0200 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	8.0200 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	8.0200 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	93.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	93.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	93.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	93.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	448.1292 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	4.8800 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	9.0100 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	93.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	93.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	93.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	93.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	448.1292 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	4.8800 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	4.8800 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	8.0200 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	8.0200 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	8.0200 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	72.5230 (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	40.85388 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	297.15000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	76.50802 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	24.15116 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.05681 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00715 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00007 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	71.60962 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00715 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00897 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.05896 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	10.56098 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00007 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00007 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00060 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	2.61135 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00305 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00654 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00874 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	314.92520 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	1.71195 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00204 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	13.98950 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	4.90616 (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	515.21282 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	106.67402 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	265.55022 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	88.29600 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	338.0039 (mg/s)
	mass flux in river at SW-002	M_r2 =	414.5119 (mg/s)
	mass flux in river at SW-003	M_r3 =	438.7271 (mg/s)
	mass flux in river at SW-004	M_r4 =	523.6033 (mg/s)
	mass flux in river at SW-004A	M_r4A =	859.1381 (mg/s)
	mass flux in river at SW-005	M_r5 =	1,374.3509 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	1,481.0250 (mg/s)
	mass flux into Colby Lake	M_cl =	1,834.8712 (mg/s)
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C_r1 =	10.12169 (mg/L)
	concentration in river at SW-002	C_r2 =	9.65471 (mg/L)
	concentration in river at SW-003	C_r3 =	9.54882 (mg/L)
	concentration in river at SW-004	C_r4 =	9.09421 (mg/L)
	concentration in river at SW-004A	C_r4A =	8.64155 (mg/L)
	concentration in river at SW-005	C_r5 =	8.39758 (mg/L)
	concentration in river at USGS Gage	C_r6 =	8.36920 (mg/L)
	concentration in Colby Lake (H)	C_cl =	8.04392 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case		Year 5	
Parameter	Manganese		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.1500 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.1500 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.1500 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.1500 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.1500 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.1500 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.1500 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.1500 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.1500 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0086 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.1240 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.1240 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.1240 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.1240 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.1240 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.1240 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.1240 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.1240 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.2712 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.7500 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.7500 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.7500 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	9.2033 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.1604 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.1160 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.2712 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.7500 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.7500 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.7500 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	9.2033 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.1604 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	0.1604 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.1240 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.1240 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.1240 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.9101 (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.63166 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.24338 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	1.18292 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.37341 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00046 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00006 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	1.10718 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00006 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00007 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00121 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.34711 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00001 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.08583 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00005 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00010 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00011 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	4.86917 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.00499 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.18011 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	0.16125 (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	7.96588 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	1.64932 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	4.10576 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	1.65555 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	0.8750 (mg/s)
	mass flux in river at SW-002	M_r2 =	2.0580 (mg/s)
	mass flux in river at SW-003	M_r3 =	2.4319 (mg/s)
	mass flux in river at SW-004	M_r4 =	3.9736 (mg/s)
	mass flux in river at SW-004A	M_r4A =	9.1891 (mg/s)
	mass flux in river at SW-005	M_r5 =	17.1550 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	18.8043 (mg/s)
	mass flux into Colby Lake	M_cl =	24.5657 (mg/s)
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C_r1 =	0.02620 (mg/L)
	concentration in river at SW-002	C_r2 =	0.04793 (mg/L)
	concentration in river at SW-003	C_r3 =	0.05293 (mg/L)
	concentration in river at SW-004	C_r4 =	0.06902 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.09243 (mg/L)
	concentration in river at SW-005	C_r5 =	0.10482 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.10626 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.14428 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case	Year 5		
Parameter	Sodium		
Input concentration data	concentration of surface water into SW-001	C s1 =	2.5000 (mg/L)
	concentration of surface water into SW-002	C s2 =	2.5000 (mg/L)
	concentration of surface water into SW-003	C s3 =	2.5000 (mg/L)
	concentration of surface water into SW-004	C s4 =	2.5000 (mg/L)
	concentration of surface water into SW-004A	C s4A =	2.5000 (mg/L)
	concentration of surface water into SW-005	C s5 =	2.5000 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	2.5000 (mg/L)
	concentration of surface water into Colby Lake	C scl =	2.5000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	2.5000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	4.8000 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	13.3300 (mg/L)
	concentration of ground water into SW-002	C g2 =	13.3300 (mg/L)
	concentration of ground water into SW-003	C g3 =	13.3300 (mg/L)
	concentration of ground water into SW-004	C g4 =	13.3300 (mg/L)
	concentration of ground water into SW-004A	C g4A =	13.3300 (mg/L)
	concentration of ground water into SW-005	C g5 =	13.3300 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	13.3300 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	13.3300 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	185.2564 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	681.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	681.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	407.4655 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	56.2300 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	4.6000 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	7.1900 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	185.2564 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	681.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	681.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	407.4655 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	56.2300 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	4.6000 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	4.6000 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	13.3300 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	13.3300 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	13.3300 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	153.0910 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	(mg/s)
	mass flux of ground water into SW-001	M g1 =	67.90302 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	135.84000 (mg/s)
	mass flux of surface water into SW-002	M s2 =	(mg/s)
	mass flux of ground water into SW-002	M g2 =	127.16357 (mg/s)
	mass flux of surface water into SW-003	M s3 =	(mg/s)
	mass flux of ground water into SW-003	M g3 =	40.14151 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep 003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3 003 =	0.41596 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO 003 =	0.05239 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s 003 =	0.00055 (mg/s)
	mass flux of surface water into SW-004	M s4 =	(mg/s)
	mass flux of ground water into SW-004	M g4 =	119.02198 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep 004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3 004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO 004 =	0.05239 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.03932 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00740 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	9.95502 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs 004 =	0.00053 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00029 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00007 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	2.46151 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00507 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.01087 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.01844 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M g4A =	523.43553 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	3.41022 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00406 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	11.16365 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	4.62466 (mg/s)
	mass flux of surface water into SW-005	M s5 =	- (mg/s)
	mass flux of ground water into SW-005	M g5 =	856.33253 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	177.30233 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	441.36963 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl =	27.59250 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M r1 =	203.7430 (mg/s)
	mass flux in river at SW-002	M r2 =	330.9066 (mg/s)
	mass flux in river at SW-003	M r3 =	371.5170 (mg/s)
	mass flux in river at SW-004	M r4 =	503.0904 (mg/s)
	mass flux in river at SW-004A	M r4A =	1,045.7286 (mg/s)
	mass flux in river at SW-005	M r5 =	1,902.0611 (mg/s)
	mass flux in river at USGS Gage	M r6 =	2,079.3634 (mg/s)
mass flux into Colby Lake	M cl =	2,548.3255 (mg/s)	
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C r1 =	6.10119 (mg/L)
	concentration in river at SW-002	C r2 =	7.70739 (mg/L)
	concentration in river at SW-003	C r3 =	8.08600 (mg/L)
	concentration in river at SW-004	C r4 =	8.73793 (mg/L)
	concentration in river at SW-004A	C r4A =	10.51836 (mg/L)
	concentration in river at SW-005	C r5 =	11.62200 (mg/L)
	concentration in river at USGS Gage	C r6 =	11.75038 (mg/L)
	concentration in Colby Lake (H)	C cl =	3.82626 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 5 Nickel		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0016 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0016 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0016 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0016 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0016 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0016 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0016 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0016 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0033 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0016 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0163 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0163 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0163 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0163 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0163 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0163 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0163 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0163 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.1170 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.8600 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.8600 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.8600 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	46.5863 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0080 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.0190 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.1170 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.8600 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.8600 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.8600 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	46.5863 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0080 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	0.0080 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0163 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0163 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0163 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	3.7296 (mg/L)
			Low Flow
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	(mg/s)
	mass flux of ground water into SW-001	M g1 =	0.08293 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.04387 (mg/s)
	mass flux of surface water into SW-002	M s2 =	(mg/s)
	mass flux of ground water into SW-002	M g2 =	0.15531 (mg/s)
	mass flux of surface water into SW-003	M s3 =	(mg/s)
	mass flux of ground water into SW-003	M g3 =	0.04903 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep 003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3 003 =	0.00053 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO 003 =	0.00007 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s 003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	(mg/s)
	mass flux of ground water into SW-004	M g4 =	0.14536 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep 004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3 004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO 004 =	0.00007 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00008 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00613 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.01725 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs 004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00006 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.00426 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00001 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00001 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00045 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.63927 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	0.00215 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	0.02950 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	0.00801 (mg/s)
	mass flux of surface water into SW-005	M s5 =	- (mg/s)
	mass flux of ground water into SW-005	M g5 =	1.04584 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.21654 (mg/s)
mass flux of surface water into Colby Lake	M scl =	- (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	0.53905 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.03642 (mg/s)	
			Low Flow
Mass balance at each node	mass flux in river at SW-001	M r1 =	0.1268 (mg/s)
	mass flux in river at SW-002	M r2 =	0.2821 (mg/s)
	mass flux in river at SW-003	M r3 =	0.3317 (mg/s)
	mass flux in river at SW-004	M r4 =	0.5054 (mg/s)
	mass flux in river at SW-004A	M r4A =	1.1843 (mg/s)
	mass flux in river at SW-005	M r5 =	2.2302 (mg/s)
	mass flux in river at USGS Gage	M r6 =	2.4467 (mg/s)
mass flux into Colby Lake	M cl =	3.0222 (mg/s)	
			Low Flow
Convert mass flux to concentration	concentration in river at SW-001	C r1 =	0.00380 (mg/L)
	concentration in river at SW-002	C r2 =	0.00657 (mg/L)
	concentration in river at SW-003	C r3 =	0.00722 (mg/L)
	concentration in river at SW-004	C r4 =	0.00878 (mg/L)
	concentration in river at SW-004A	C r4A =	0.01191 (mg/L)
	concentration in river at SW-005	C r5 =	0.01363 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.01383 (mg/L)
concentration in Colby Lake (H)	C cl =	0.00334 (mg/L)	



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 5 Lead		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0005 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0005 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0005 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0005 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0005 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0005 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0005 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0005 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0005 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0002 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0011 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0011 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0011 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0011 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0011 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0011 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0011 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0011 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.0140 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.0257 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0263 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0528 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.0528 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0007 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.0140 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.0257 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.0263 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0528 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0528 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0007 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	0.0007 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0011 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0011 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0011 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	0.0133 (mg/L)
			Low Flow
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	- (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.00571 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.00425 (mg/s)
	mass flux of surface water into SW-002	M s2 =	- (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.01068 (mg/s)
	mass flux of surface water into SW-003	M s3 =	- (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.00337 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep 003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3 003 =	0.00002 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO 003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s 003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	- (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.01000 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep 004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3 004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO 004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00001 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.00146 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs 004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.00036 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00000 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.04398 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	0.00026 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	0.00068 (mg/s)
	mass flux of surface water into SW-005	M s5 =	- (mg/s)
	mass flux of ground water into SW-005	M g5 =	0.07195 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.01490 (mg/s)
mass flux of surface water into Colby Lake	M scl =	- (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	0.03708 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.00552 (mg/s)	
			Low Flow
Mass balance at each node	mass flux in river at SW-001	M r1 =	0.0100 (mg/s)
	mass flux in river at SW-002	M r2 =	0.0206 (mg/s)
	mass flux in river at SW-003	M r3 =	0.0240 (mg/s)
	mass flux in river at SW-004	M r4 =	0.0359 (mg/s)
	mass flux in river at SW-004A	M r4A =	0.0808 (mg/s)
	mass flux in river at SW-005	M r5 =	0.1527 (mg/s)
	mass flux in river at USGS Gage	M r6 =	0.1676 (mg/s)
mass flux into Colby Lake	M cl =	0.2102 (mg/s)	
Convert mass flux to concentration	concentration in river at SW-001	C r1 =	0.00030 (mg/L)
	concentration in river at SW-002	C r2 =	0.00048 (mg/L)
	concentration in river at SW-003	C r3 =	0.00052 (mg/L)
	concentration in river at SW-004	C r4 =	0.00062 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00081 (mg/L)
	concentration in river at SW-005	C r5 =	0.00093 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00095 (mg/L)
	concentration in Colby Lake (H)	C cl =	0.00057 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 5 Antimony		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0015 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0015 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0015 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0015 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0015 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0015 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0015 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0015 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0015 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0015 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0015 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0015 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0015 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0015 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0015 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0015 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0015 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0015 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.0800 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.0800 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0800 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0800 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.0271 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0003 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.0004 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.0800 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.0800 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.0800 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0800 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0271 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0003 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	0.0003 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0015 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0015 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0015 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	0.0362 (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M s1 =	(mg/s)
	mass flux of ground water into SW-001	M g1 =	0.00764 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.04245 (mg/s)
	mass flux of surface water into SW-002	M s2 =	(mg/s)
	mass flux of ground water into SW-002	M g2 =	0.01431 (mg/s)
	mass flux of surface water into SW-003	M s3 =	(mg/s)
	mass flux of ground water into SW-003	M g3 =	0.00452 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep 003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3 003 =	0.00005 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO 003 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s 003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	(mg/s)
	mass flux of ground water into SW-004	M g4 =	0.01339 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep 004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3 004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO 004 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00001 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.00065 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs 004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.00016 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00000 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.05890 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	0.00147 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	0.00062 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	0.00030 (mg/s)
	mass flux of surface water into SW-005	M s5 =	- (mg/s)
	mass flux of ground water into SW-005	M g5 =	0.09636 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.01995 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	0.04967 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.01656 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M r1 =	0.0501 (mg/s)
	mass flux in river at SW-002	M r2 =	0.0644 (mg/s)
	mass flux in river at SW-003	M r3 =	0.0690 (mg/s)
	mass flux in river at SW-004	M r4 =	0.0832 (mg/s)
	mass flux in river at SW-004A	M r4A =	0.1445 (mg/s)
	mass flux in river at SW-005	M r5 =	0.2409 (mg/s)
	mass flux in river at USGS Gage	M r6 =	0.2608 (mg/s)
	mass flux into Colby Lake	M cl =	0.3270 (mg/s)
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C r1 =	0.00150 (mg/L)
	concentration in river at SW-002	C r2 =	0.00150 (mg/L)
	concentration in river at SW-003	C r3 =	0.00150 (mg/L)
	concentration in river at SW-004	C r4 =	0.00145 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00145 (mg/L)
	concentration in river at SW-005	C r5 =	0.00147 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00147 (mg/L)
	concentration in Colby Lake (H)	C cl =	0.00150 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 5 Selenium			
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0005 (mg/L)	
	concentration of surface water into SW-002	C s2 =	0.0005 (mg/L)	
	concentration of surface water into SW-003	C s3 =	0.0005 (mg/L)	
	concentration of surface water into SW-004	C s4 =	0.0005 (mg/L)	
	concentration of surface water into SW-004A	C s4A =	0.0005 (mg/L)	
	concentration of surface water into SW-005	C s5 =	0.0005 (mg/L)	
	concentration of surface water into USGS Gage	C s6 =	0.0005 (mg/L)	
	concentration of surface water into Colby Lake	C scl =	0.0005 (mg/L)	
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0005 (mg/L)	
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0005 (mg/L)	
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)	
	concentration of ground water into SW-001	C g1 =	0.0019 (mg/L)	
	concentration of ground water into SW-002	C g2 =	0.0019 (mg/L)	
	concentration of ground water into SW-003	C g3 =	0.0019 (mg/L)	
	concentration of ground water into SW-004	C g4 =	0.0019 (mg/L)	
	concentration of ground water into SW-004A	C g4A =	0.0019 (mg/L)	
	concentration of ground water into SW-005	C g5 =	0.0019 (mg/L)	
	concentration of ground water into USGS Gage	C g6 =	0.0019 (mg/L)	
	concentration of ground water into Colby Lake	C gcl =	0.0019 (mg/L)	
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)	
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)	
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.0029 (mg/L)	
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.0029 (mg/L)	
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0029 (mg/L)	
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0029 (mg/L)	
	concentration of liner leakage from LOSP	C gC4LO =	0.0029 (mg/L)	
	concentration of seepage from Overburden (Storage)	C gOS =	0.0004 (mg/L)	
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.0019 (mg/L)	
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.0029 (mg/L)	
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.0029 (mg/L)	
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.0029 (mg/L)	
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0029 (mg/L)	
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0029 (mg/L)	
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0004 (mg/L)	
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	0.0004 (mg/L)	
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0019 (mg/L)	
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0019 (mg/L)	
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0019 (mg/L)	
	concentration of liner leakage from WWTF ponc	C_gWTFp =	0.0024 (mg/L)	
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Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 5 Sulfate		
Input concentration data	concentration of surface water into SW-001	C s1 =	9.0000 (mg/L)
	concentration of surface water into SW-002	C s2 =	9.0000 (mg/L)
	concentration of surface water into SW-003	C s3 =	9.0000 (mg/L)
	concentration of surface water into SW-004	C s4 =	9.0000 (mg/L)
	concentration of surface water into SW-004A	C s4A =	9.0000 (mg/L)
	concentration of surface water into SW-005	C s5 =	9.0000 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	9.0000 (mg/L)
	concentration of surface water into Colby Lake	C scl =	9.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	22.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	22.0000 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	16.1300 (mg/L)
	concentration of ground water into SW-002	C g2 =	16.1300 (mg/L)
	concentration of ground water into SW-003	C g3 =	16.1300 (mg/L)
	concentration of ground water into SW-004	C g4 =	16.1300 (mg/L)
	concentration of ground water into SW-004A	C g4A =	16.1300 (mg/L)
	concentration of ground water into SW-005	C g5 =	16.1300 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	16.1300 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	16.1300 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	452.9928 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	2,340.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	2,340.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	2,340.0000 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	5,751.5878 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	35.1700 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	68.3000 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	452.9928 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	2,340.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	2,340.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	2,340.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	5,751.5878 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	35.1700 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	35.1700 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	16.1300 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	16.1300 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	16.1300 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	960.9200 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	(mg/s)
	mass flux of ground water into SW-001	M g1 =	82.16622 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	622.60000 (mg/s)
	mass flux of surface water into SW-002	M s2 =	(mg/s)
	mass flux of ground water into SW-002	M g2 =	153.87460 (mg/s)
	mass flux of surface water into SW-003	M s3 =	(mg/s)
	mass flux of ground water into SW-003	M g3 =	48.57334 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	1.42929 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.18000 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00189 (mg/s)
	mass flux of surface water into SW-004	M s4 =	(mg/s)
	mass flux of ground water into SW-004	M g4 =	144.02284 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.18000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.22581 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.75671 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	76.11262 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00180 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00164 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00766 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	18.81988 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00614 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.01315 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.11574 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M g4A =	633.38448 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	8.33874 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00993 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	106.04696 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	35.35856 (mg/s)
	mass flux of surface water into SW-005	M s5 =	- (mg/s)
	mass flux of ground water into SW-005	M g5 =	1,036.20733 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	214.54513 (mg/s)
mass flux of surface water into Colby Lake	M scl =	- (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	534.08043 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	99.33300 (mg/s)	
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M r1 =	704.7662 (mg/s)
	mass flux in river at SW-002	M r2 =	858.6408 (mg/s)
	mass flux in river at SW-003	M r3 =	908.8253 (mg/s)
	mass flux in river at SW-004	M r4 =	1,149.0912 (mg/s)
	mass flux in river at SW-004A	M r4A =	1,932.2299 (mg/s)
	mass flux in river at SW-005	M r5 =	2,968.4372 (mg/s)
	mass flux in river at USGS Gage	M r6 =	3,182.9823 (mg/s)
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C r1 =	21.10458 (mg/L)
	concentration in river at SW-002	C r2 =	19.99925 (mg/L)
	concentration in river at SW-003	C r3 =	19.78042 (mg/L)
	concentration in river at SW-004	C r4 =	19.95800 (mg/L)
	concentration in river at SW-004A	C r4A =	19.43514 (mg/L)
	concentration in river at SW-005	C r5 =	18.13779 (mg/L)
	concentration in river at USGS Gage	C r6 =	17.98687 (mg/L)
	concentration in Colby Lake (H)	C cl =	10.21768 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 5 Thallium		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0004 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0004 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0004 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0004 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0004 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0004 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0004 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0004 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0004 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0003 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0000 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0000 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0000 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0000 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0000 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0000 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0000 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0000 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0000 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.0001 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0000 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0001 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0000 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	0.0000 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0000 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0000 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0000 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	0.0009 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case	Year 5		
Parameter	Vanadium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0009 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0009 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0009 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0009 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0009 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0009 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0009 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0009 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0009 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0043 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0043 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0043 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0043 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0043 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0043 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0043 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0043 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0043 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0698 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	1.2474 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	1.2780 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.1598 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0139 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0017 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.0014 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0698 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	1.2474 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	1.2780 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.1598 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0139 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0017 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	0.0017 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0043 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0043 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0043 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.1932 (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.02190 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.12169 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.04102 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.01295 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00076 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00010 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.03839 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00010 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00002 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00374 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00093 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00002 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.16885 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.00129 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.00217 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	0.00174 (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.27624 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.05719 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.14238 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00993 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	0.1438 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.1846 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.1984 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.2416 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.4157 (mg/s)
	mass flux in river at SW-005	M_r5 =	0.6919 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	0.7491 (mg/s)
	mass flux into Colby Lake	M_cl =	0.9014 (mg/s)
	Low Flow		
	concentration in river at SW-001	C_r1 =	0.00430 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00430 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00432 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00420 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00418 (mg/L)
Convert mass flux to concentration	concentration in river at SW-005	C_r5 =	0.00423 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00423 (mg/L)
	concentration in Colby Lake (H	C_cl =	0.00137 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 5 Zinc		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0160 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0160 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0160 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0160 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0160 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0160 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0160 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0160 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0620 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0073 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0275 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0275 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0275 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0275 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0275 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0275 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0275 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0275 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.0900 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.0900 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0900 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0900 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	26.0000 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0046 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.0030 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.0900 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.0900 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.0900 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0900 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	26.0000 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0046 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	0.0046 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0275 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0275 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0275 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	2.0185 (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M s1 =	(mg/s)
	mass flux of ground water into SW-001	M g1 =	0.14009 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.20744 (mg/s)
	mass flux of surface water into SW-002	M s2 =	(mg/s)
	mass flux of ground water into SW-002	M g2 =	0.26234 (mg/s)
	mass flux of surface water into SW-003	M s3 =	(mg/s)
	mass flux of ground water into SW-003	M g3 =	0.08281 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.00005 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	(mg/s)
	mass flux of ground water into SW-004	M g4 =	0.24554 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00001 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00342 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.00987 (mg/s)
mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)	
mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)	
mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00003 (mg/s)	
mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.00244 (mg/s)	
mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00001 (mg/s)	
mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00002 (mg/s)	
mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)	
mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00024 (mg/s)	
mass flux of surface water into SW-004A	M s4A =	- (mg/s)	
mass flux of ground water into SW-004A	M g4A =	1.07986 (mg/s)	
mass flux of West Pit overflow	M sms =	#N/A (mg/s)	
mass flux of liner leakage from Cat 1 stockpile	M gC12 =	0.00166 (mg/s)	
mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00000 (mg/s)	
mass flux of seepage from Overburden (Cat 1)	M gO12 =	0.00466 (mg/s)	
mass flux of seepage from Overburden Pond - PW7	M gOp7 =	0.00458 (mg/s)	
mass flux of surface water into SW-005	M s5 =	- (mg/s)	
mass flux of ground water into SW-005	M g5 =	1.76663 (mg/s)	
mass flux of surface water into USGS Gage	M s6 =	- (mg/s)	
mass flux of ground water into USGS Gage	M g6 =	0.36578 (mg/s)	
mass flux of surface water into Colby Lake	M scl =	- (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	0.91055 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.68429 (mg/s)	
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M r1 =	0.3475 (mg/s)
	mass flux in river at SW-002	M r2 =	0.6099 (mg/s)
	mass flux in river at SW-003	M r3 =	0.6927 (mg/s)
	mass flux in river at SW-004	M r4 =	0.9543 (mg/s)
	mass flux in river at SW-004A	M r4A =	2.0451 (mg/s)
	mass flux in river at SW-005	M r5 =	3.8117 (mg/s)
	mass flux in river at USGS Gage	M r6 =	4.1775 (mg/s)
mass flux into Colby Lake	M cl =	5.7723 (mg/s)	
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C r1 =	0.01041 (mg/L)
	concentration in river at SW-002	C r2 =	0.01420 (mg/L)
	concentration in river at SW-003	C r3 =	0.01508 (mg/L)
	concentration in river at SW-004	C r4 =	0.01658 (mg/L)
	concentration in river at SW-004A	C r4A =	0.02057 (mg/L)
	concentration in river at SW-005	C r5 =	0.02329 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.02361 (mg/L)
	concentration in Colby Lake (H)	C cl =	0.01748 (mg/L)

## Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

### FLOWS

Case Flow	Year 5 Average Flow Conditions (mean annual)			
Total flow in Partridge River	flow in river at SW-001	Q_r1_M =	5.70	(cfs)
	flow in river at SW-002	Q_r2_M =	11.31	(cfs)
	flow in river at SW-003	Q_r3_M =	13.01	(cfs)
	flow in river at SW-004	Q_r4_M =	19.26	(cfs)
	flow in river at SW-004A	Q_r4a_M =	44.26	(cfs)
	flow in river at SW-005	Q_r5_M =	82.66	(cfs)
	flow in river at USGS Gage	Q_r6_M =	87.01	(cfs)
	total flow into Colby Lake	Q_cl_M =	112.13	(cfs)
	flow check	Q_ck_M =	112.13	(cfs)
input flow data	surface water flow into SW-001	Q_s1_M =	4.52	(cfs)
	surface water flow into SW-002	Q_s2_M =	5.27	(cfs)
	surface water flow into SW-003	Q_s3_M =	1.59	(cfs)
	surface water flow into SW-004	Q_s4_M =	5.84	(cfs)
	surface water flow into SW-004A	Q_s4a_M =	23.51	(cfs)
	surface water flow into SW-005	Q_s5_M =	36.13	(cfs)
	surface water flow into USGS Gage	Q_s6_M =	3.88	(cfs)
	surface water flow into Colby Lake	Q_scl_M =	23.56	(cfs)
	surface water inflow from Hoyt Lakes WWTP	Q_shl_M =	0.39	(cfs)
	surface water inflow from discharges upstream of PM-1	Q_sns_M =	1.00	(cfs)
	surface water flow from West Pit overflow	Q_sms_M =	-	(cfs)
	ground water flow into SW-001	Q_g1_M =	0.18	(cfs)
	ground water flow into SW-002	Q_g2_M =	0.34	(cfs)
	ground water flow into SW-003	Q_g3_M =	0.11	(cfs)
	ground water flow into SW-004	Q_g4_M =	0.32	(cfs)
	ground water flow into SW-004A	Q_g4a_M =	1.39	(cfs)
	ground water flow into SW-005	Q_g5_M =	2.27	(cfs)
	ground water flow into USGS Gage	Q_g6_M =	0.47	(cfs)
	ground water flow into Colby Lake	Q_gcl_M =	1.17	(cfs)
	ground water seepage from East Pit to SW-003	Q_gep_003_M =	-	(cfs)
	ground water seepage from East Pit to SW-004	Q_gep_004_M =	-	(cfs)
	ground water seepage from West Pit	Q_gwp_M =	-	(cfs)
	ground water liner leakage from Cat 1 stockpile	Q_gC12_M =	0.0008	(cfs)
	ground water liner leakage from Cat 2/3 stockpile to SW-003	Q_gC3_003_M =	0.0000	(cfs)
	ground water liner leakage from Cat 2/3 stockpile to SW-004	Q_gC3_004_M =	-	(cfs)
	ground water liner leakage from Cat 3LO stockpile to SW-003	Q_gC3LO_003_M =	0.0000	(cfs)
	ground water liner leakage from Cat 3LO stockpile to SW-004	Q_gC3LO_004_M =	0.0000	(cfs)
	ground water liner leakage from Cat 4 stockpile	Q_gC4_M =	0.0000	(cfs)
	ground water liner leakage from LO SP	Q_gC4LO_M =	0.0000	(cfs)
	ground water seepage from Overburden Storage	Q_gOS_M =	0.0765	(cfs)
	ground water seepage from Overburden (Cat 1)	Q_gO12_M =	0.0634	(cfs)
	ground water liner leakage from Cat 1 sumps	Q_gC12s_M =	0.0000	(cfs)
	ground water liner leakage from Cat 2/3 sumps	Q_gC3s_M =	0.0000	(cfs)
	ground water liner leakage from Cat 3LO sumps	Q_gC3LOs_M =	0.0000	(cfs)
	ground water liner leakage from Cat 4 sumps	Q_gC4s_M =	0.0000	(cfs)
	ground water liner leakage from LO SP sumps	Q_gC4LOs_M =	0.0000	(cfs)
	ground water seepage from Overburden pond - PW1	Q_gOp1_M =	0.0189	(cfs)
	ground water seepage from Overburden pond - PW7	Q_gOp7_M =	0.0355	(cfs)
	ground water leakage from Haul Road pond - PW2	Q_gHRp2_M =	0.0000	(cfs)
	ground water leakage from Haul Road pond - PW4	Q_gHRp4_M =	0.0000	(cfs)
	ground water leakage from RTH pond - PW3	Q_gRTHp_M =	0.0000	(cfs)
	ground water liner leakage from WWTF pond	Q_gWTFp_M =	0.000004	(cfs)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case	Year 5		
Parameter	Silver		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0001 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0001 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0001 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0001 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0001 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0001 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0001 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0001 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0001 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0001 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0006 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0006 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0006 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0006 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0006 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0006 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0006 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0006 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.0007 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.0007 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0007 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0007 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.0007 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	- (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.0007 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.0007 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.0007 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0007 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0007 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	- (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	- (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0006 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0006 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0006 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0008 (mg/L)
Convert concentration to mass flux	Average Flow		
	mass flux of surface water into SW-001	M s1 =	0.01279 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.00280 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.00340 (mg/s)
	mass flux of surface water into SW-002	M s2 =	0.01493 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.00525 (mg/s)
	mass flux of surface water into SW-003	M s3 =	0.00449 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.00166 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	0.01654 (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.00491 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)	
mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00000 (mg/s)	
mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00000 (mg/s)	
mass flux of liner leakage from LOSP	M gC4LO =	0.00000 (mg/s)	
mass flux of seepage from Overburden (Storage)	M gOS =	- (mg/s)	
mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)	
mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)	
mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)	
mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	- (mg/s)	
mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00000 (mg/s)	
mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00000 (mg/s)	
mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)	
mass flux of liner leakage from WWTF pond	M gWTFp =	0.00000 (mg/s)	
mass flux of surface water into SW-004A	M s4A =	0.06654 (mg/s)	
mass flux of ground water into SW-004A	M g4A =	0.02160 (mg/s)	
mass flux of West Pit overflow	M sms =	#N/A (mg/s)	
mass flux of liner leakage from Cat 1 stockpile	M gC12 =	0.00002 (mg/s)	
mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00000 (mg/s)	
mass flux of seepage from Overburden (Cat 1)	M gO12 =	- (mg/s)	
mass flux of seepage from Overburden Pond - PW7	M gOp7 =	- (mg/s)	
mass flux of surface water into SW-005	M s5 =	0.10224 (mg/s)	
mass flux of ground water into SW-005	M g5 =	0.03533 (mg/s)	
mass flux of surface water into USGS Gage	M s6 =	0.01098 (mg/s)	
mass flux of ground water into USGS Gage	M g6 =	0.00732 (mg/s)	
mass flux of surface water into Colby Lake	M scl =	0.06667 (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	0.01821 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.00110 (mg/s)	
Mass balance at each node	Average Flow		
	mass flux in river at SW-001	M r1 =	0.0190 (mg/s)
	mass flux in river at SW-002	M r2 =	0.0392 (mg/s)
	mass flux in river at SW-003	M r3 =	0.0453 (mg/s)
	mass flux in river at SW-004	M r4 =	0.0668 (mg/s)
	mass flux in river at SW-004A	M r4A =	0.1549 (mg/s)
	mass flux in river at SW-005	M r5 =	0.2925 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M r6 =	0.3108 (mg/s)
	mass flux into Colby Lake	M cl =	0.3968 (mg/s)
	Average Flow		
	concentration in river at SW-001	C r1 =	0.00012 (mg/L)
	concentration in river at SW-002	C r2 =	0.00012 (mg/L)
	concentration in river at SW-003	C r3 =	0.00012 (mg/L)
	concentration in river at SW-004	C r4 =	0.00012 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00012 (mg/L)
	concentration in river at SW-005	C r5 =	0.00013 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00013 (mg/L)
	concentration in Colby Lake	C cl =	0.00013 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case	Year 5		
Parameter	Aluminum		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0700 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0700 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0700 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0700 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0700 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0700 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0700 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0700 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0700 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0173 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.1250 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.1250 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.1250 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.1250 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.1250 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.1250 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.1250 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.1250 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	1.6800 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	1.6800 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	1.6800 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	1.6800 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	37.7198 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.4106 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.1400 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	1.6800 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	1.6800 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	1.6800 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	1.6800 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	37.7198 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.4106 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	0.4106 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.1250 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.1250 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.1250 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	5.5520 (mg/L)
Convert concentration to mass flux	Average Flow		
	mass flux of surface water into SW-001	M_s1 =	8.95493 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.63675 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.48959 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	10.44842 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	1.19246 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	3.14515 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.37642 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00169 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00021 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	11.57762 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	1.11611 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00021 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00027 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00811 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.88859 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00005 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.21972 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00005 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00010 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00067 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	46.57623 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	4.90844 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.03644 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00004 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.25116 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	0.41280 (mg/s)
	mass flux of surface water into SW-005	M_s5 =	71.57016 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	8.03013 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	7.68582 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	1.66263 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	46.67236 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	4.13888 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.77259 (mg/s)
Mass balance at each node	Average Flow		
	mass flux in river at SW-001	M_r1 =	10.0813 (mg/s)
	mass flux in river at SW-002	M_r2 =	21.7222 (mg/s)
	mass flux in river at SW-003	M_r3 =	25.2456 (mg/s)
	mass flux in river at SW-004	M_r4 =	39.0571 (mg/s)
	mass flux in river at SW-004A	M_r4A =	91.2422 (mg/s)
	mass flux in river at SW-005	M_r5 =	170.8425 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	180.1910 (mg/s)
	mass flux into Colby Lake	M_cl =	231.7748 (mg/s)
	Average Flow		
	concentration in river at SW-001	C_r1 =	0.06249 (mg/L)
	concentration in river at SW-002	C_r2 =	0.06786 (mg/L)
	concentration in river at SW-003	C_r3 =	0.06859 (mg/L)
	concentration in river at SW-004	C_r4 =	0.07165 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.07284 (mg/L)
	concentration in river at SW-005	C_r5 =	0.07303 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.07318 (mg/L)
	concentration in Colby Lake	C_cl =	0.07304 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case		Year 5	
Parameter		Arsenic	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0021 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0021 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0021 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0021 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0021 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0021 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0021 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0021 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0021 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0065 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0022 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0022 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0022 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0022 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0022 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0022 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0022 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0022 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0660 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.7100 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.7100 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.7100 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0376 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0016 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.0027 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0660 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.7100 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.7100 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.7100 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0376 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0016 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	0.0016 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0022 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0022 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0022 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.1618 (mg/L)
		Average Flow	
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	0.26993 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.01100 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.18395 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	0.31495 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.02061 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.09480 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00650 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00071 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00009 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.34898 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.01929 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00009 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00011 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00338 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00083 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00002 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	1.40394 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.08482 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.00143 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.00484 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	0.00157 (mg/s)
	mass flux of surface water into SW-005	M_s5 =	2.15733 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.13876 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.23167 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.02873 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	1.40684 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.07152 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.02329 (mg/s)
		Average Flow	
Mass balance at each node	mass flux in river at SW-001	M_r1 =	0.4649 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.8004 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.9025 (mg/s)
	mass flux in river at SW-004	M_r4 =	1.2753 (mg/s)
	mass flux in river at SW-004A	M_r4A =	2.7719 (mg/s)
	mass flux in river at SW-005	M_r5 =	5.0679 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	5.3284 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	6.8300 (mg/s)
			Average Flow
	concentration in river at SW-001	C_r1 =	0.00288 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00250 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00245 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00234 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00221 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00217 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00216 (mg/L)
	concentration in Colby Lake	C_cl =	0.00215 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case	Year 5		
Parameter	Boron		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0450 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0450 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0450 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0450 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0450 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0450 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0450 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0450 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0450 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0960 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0870 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0870 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0870 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0870 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0870 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0870 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0870 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0870 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.2470 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.7600 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.7600 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.7600 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.7600 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0622 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.0370 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.2470 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.7600 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.7600 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.7600 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.7600 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0622 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	0.0622 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0870 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0870 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0870 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.3282 (mg/L)
Convert concentration to mass flux	Average Flow		
	mass flux of surface water into SW-001	M s1 =	5.75674 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.44318 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	2.71680 (mg/s)
	mass flux of surface water into SW-002	M s2 =	6.71684 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.82995 (mg/s)
	mass flux of surface water into SW-003	M s3 =	2.02188 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.26199 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.00076 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00010 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	7.44275 (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.77681 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00010 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00012 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00016 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.13461 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.03328 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00003 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00007 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00004 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	29.94186 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	3.41627 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	0.00536 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	0.06638 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	0.06253 (mg/s)
	mass flux of surface water into SW-005	M s5 =	46.00939 (mg/s)
	mass flux of ground water into SW-005	M g5 =	5.58897 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	4.94089 (mg/s)
mass flux of ground water into USGS Gage	M g6 =	1.15719 (mg/s)	
mass flux of surface water into Colby Lake	M scl =	30.00366 (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	2.88066 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.49667 (mg/s)	
Mass balance at each node	Average Flow		
	mass flux in river at SW-001	M r1 =	8.9167 (mg/s)
	mass flux in river at SW-002	M r2 =	16.4635 (mg/s)
	mass flux in river at SW-003	M r3 =	18.7482 (mg/s)
	mass flux in river at SW-004	M r4 =	27.1362 (mg/s)
	mass flux in river at SW-004A	M r4A =	60.6286 (mg/s)
	mass flux in river at SW-005	M r5 =	112.2270 (mg/s)
	mass flux in river at USGS Gage	M r6 =	118.3251 (mg/s)
mass flux into Colby Lake	M cl =	151.7060 (mg/s)	
Convert mass flux to concentration	Average Flow		
	concentration in river at SW-001	C r1 =	0.05527 (mg/L)
	concentration in river at SW-002	C r2 =	0.05143 (mg/L)
	concentration in river at SW-003	C r3 =	0.05094 (mg/L)
	concentration in river at SW-004	C r4 =	0.04978 (mg/L)
	concentration in river at SW-004A	C r4A =	0.04840 (mg/L)
	concentration in river at SW-005	C r5 =	0.04798 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.04805 (mg/L)
concentration in Colby Lake	C cl =	0.04781 (mg/L)	



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case	Year 5			
Parameter	Barium			
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0077 (mg/L)	
	concentration of surface water into SW-002	C s2 =	0.0077 (mg/L)	
	concentration of surface water into SW-003	C s3 =	0.0077 (mg/L)	
	concentration of surface water into SW-004	C s4 =	0.0077 (mg/L)	
	concentration of surface water into SW-004A	C s4A =	0.0077 (mg/L)	
	concentration of surface water into SW-005	C s5 =	0.0077 (mg/L)	
	concentration of surface water into USGS Gage	C s6 =	0.0077 (mg/L)	
	concentration of surface water into Colby Lake	C scl =	0.0077 (mg/L)	
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0077 (mg/L)	
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0050 (mg/L)	
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)	
	concentration of ground water into SW-001	C g1 =	0.0219 (mg/L)	
	concentration of ground water into SW-002	C g2 =	0.0219 (mg/L)	
	concentration of ground water into SW-003	C g3 =	0.0219 (mg/L)	
	concentration of ground water into SW-004	C g4 =	0.0219 (mg/L)	
	concentration of ground water into SW-004A	C g4A =	0.0219 (mg/L)	
	concentration of ground water into SW-005	C g5 =	0.0219 (mg/L)	
	concentration of ground water into USGS Gage	C g6 =	0.0219 (mg/L)	
	concentration of ground water into Colby Lake	C gcl =	0.0219 (mg/L)	
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)	
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)	
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.1900 (mg/L)	
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.1900 (mg/L)	
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.1900 (mg/L)	
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.1900 (mg/L)	
	concentration of liner leakage from LOSP	C gC4LO =	0.1900 (mg/L)	
	concentration of seepage from Overburden (Storage)	C gOS =	0.0168 (mg/L)	
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.0140 (mg/L)	
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.1900 (mg/L)	
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.1900 (mg/L)	
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.1900 (mg/L)	
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.1900 (mg/L)	
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.1900 (mg/L)	
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0168 (mg/L)	
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	0.0168 (mg/L)	
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0219 (mg/L)	
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0219 (mg/L)	
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0219 (mg/L)	
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0969 (mg/L)	
				Average Flow
	Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	0.98248 (mg/s)
		mass flux of ground water into SW-001	M g1 =	0.11166 (mg/s)
mass flux of surface discharges from upstream of PM-1		M sns =	0.14150 (mg/s)	
mass flux of surface water into SW-002		M s2 =	1.14634 (mg/s)	
mass flux of ground water into SW-002		M g2 =	0.20911 (mg/s)	
mass flux of surface water into SW-003		M s3 =	0.34507 (mg/s)	
mass flux of ground water into SW-003		M g3 =	0.06601 (mg/s)	
mass flux of seepage from East Pit to SW-003		M gep_003 =	#N/A (mg/s)	
mass flux of liner leakage from Cat 2/3 stockpile to SW-003		M gC3_003 =	0.00019 (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-003		M gC3LO_003 =	0.00002 (mg/s)	
mass flux of liner leakage from Cat 2/3 sumps to SW-003		M gC3s_003 =	0.00000 (mg/s)	
mass flux of surface water into SW-004		M s4 =	1.27023 (mg/s)	
mass flux of ground water into SW-004		M g4 =	0.19572 (mg/s)	
mass flux of seepage from East Pit to SW-004		M gep_004 =	#N/A (mg/s)	
mass flux of seepage from West Pit		M gwp =	#N/A (mg/s)	
mass flux of liner leakage from Cat 2/3 stockpile to SW-004		M gC3_004 =	- (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-004		M gC3LO_004 =	0.00002 (mg/s)	
mass flux of liner leakage from Cat 4 stockpile		M gC4 =	0.00003 (mg/s)	
mass flux of liner leakage from LOSP		M gC4LO =	0.00004 (mg/s)	
mass flux of seepage from Overburden (Storage)		M gOS =	0.03643 (mg/s)	
mass flux of liner leakage from Cat 3LO sumps to SW-004		M gC3LOs_004 =	0.00000 (mg/s)	
mass flux of liner leakage from Cat 4 sumps		M gC4s =	0.00000 (mg/s)	
mass flux of liner leakage from LOSP sumps		M gC4LOs =	0.00000 (mg/s)	
mass flux of seepage from Overburden Ponds - PW1		M gOp1 =	0.00901 (mg/s)	
mass flux of leakage from Haul Road Pond - PW2		M gHRp2 =	0.00001 (mg/s)	
mass flux of leakage from Haul Road Pond - PW4		M gHRp4 =	0.00002 (mg/s)	
mass flux of leakage from RTH Pond - PW3		M gRTHp =	0.00000 (mg/s)	
mass flux of liner leakage from WWTF pond		M gWTFp =	0.00001 (mg/s)	
mass flux of surface water into SW-004A		M s4A =	5.11008 (mg/s)	
mass flux of ground water into SW-004A		M g4A =	0.86074 (mg/s)	
mass flux of West Pit overflow		M sms =	#N/A (mg/s)	
mass flux of liner leakage from Cat 1 stockpile		M gC12 =	0.00412 (mg/s)	
mass flux of liner leakage from Cat 1 sumps		M gC12s =	0.00000 (mg/s)	
mass flux of seepage from Overburden (Cat 1)		M gO12 =	0.02512 (mg/s)	
mass flux of seepage from Overburden Pond - PW7		M gOp7 =	0.01692 (mg/s)	
mass flux of surface water into SW-005		M s5 =	7.85227 (mg/s)	
mass flux of ground water into SW-005		M g5 =	1.40816 (mg/s)	
mass flux of surface water into USGS Gage		M s6 =	0.84324 (mg/s)	
mass flux of ground water into USGS Gage		M g6 =	0.29156 (mg/s)	
mass flux of surface water into Colby Lake		M scl =	5.12062 (mg/s)	
mass flux of ground water into Colby Lake		M gcl =	0.72579 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP		M shl =	0.08476 (mg/s)	
			Average Flow	
Mass balance at each node	mass flux in river at SW-001	M r1 =	1.2356 (mg/s)	
	mass flux in river at SW-002	M r2 =	2.5911 (mg/s)	
	mass flux in river at SW-003	M r3 =	3.0024 (mg/s)	
	mass flux in river at SW-004	M r4 =	4.5139 (mg/s)	
	mass flux in river at SW-004A	M r4A =	10.5309 (mg/s)	
	mass flux in river at SW-005	M r5 =	19.7913 (mg/s)	
	mass flux in river at USGS Gage	M r6 =	20.9261 (mg/s)	
	mass flux into Colby Lake	M cl =	26.8573 (mg/s)	
			Average Flow	
Convert mass flux to concentration	concentration in river at SW-001	C r1 =	0.00766 (mg/L)	
	concentration in river at SW-002	C r2 =	0.00809 (mg/L)	
	concentration in river at SW-003	C r3 =	0.00816 (mg/L)	
	concentration in river at SW-004	C r4 =	0.00828 (mg/L)	
	concentration in river at SW-004A	C r4A =	0.00841 (mg/L)	
	concentration in river at SW-005	C r5 =	0.00846 (mg/L)	
	concentration in river at USGS Gage	C r6 =	0.00850 (mg/L)	
	concentration in Colby Lake	C cl =	0.00846 (mg/L)	

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 5 Beryllium		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0001 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0001 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0001 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0001 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0001 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0001 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0001 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0001 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0001 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0001 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0001 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0001 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0001 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0001 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0001 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0001 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0001 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0001 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0002 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0002 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.0023 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	- (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.0002 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0002 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0023 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	- (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	- (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0001 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0001 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0001 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	0.0004 (mg/L)
		Average Flow	
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	0.01279 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.00074 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.00283 (mg/s)
	mass flux of surface water into SW-002	M s2 =	0.01493 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.00138 (mg/s)
	mass flux of surface water into SW-003	M s3 =	0.00449 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.00044 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	0.01654 (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.00129 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	- (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00000 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	0.06654 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.00569 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	- (mg/s)
	mass flux of surface water into SW-005	M s5 =	0.10224 (mg/s)
	mass flux of ground water into SW-005	M g5 =	0.00931 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	0.01098 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.00193 (mg/s)
mass flux of surface water into Colby Lake	M scl =	0.06667 (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	0.00480 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.00110 (mg/s)	
		Average Flow	
Mass balance at each node	mass flux in river at SW-001	M r1 =	0.0164 (mg/s)
	mass flux in river at SW-002	M r2 =	0.0327 (mg/s)
	mass flux in river at SW-003	M r3 =	0.0376 (mg/s)
	mass flux in river at SW-004	M r4 =	0.0554 (mg/s)
	mass flux in river at SW-004A	M r4A =	0.1277 (mg/s)
	mass flux in river at SW-005	M r5 =	0.2392 (mg/s)
	mass flux in river at USGS Gage	M r6 =	0.2521 (mg/s)
mass flux into Colby Lake	M cl =	0.3247 (mg/s)	
		Average Flow	
Convert mass flux to concentration	concentration in river at SW-001	C r1 =	0.00010 (mg/L)
	concentration in river at SW-002	C r2 =	0.00010 (mg/L)
	concentration in river at SW-003	C r3 =	0.00010 (mg/L)
	concentration in river at SW-004	C r4 =	0.00010 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00010 (mg/L)
	concentration in river at SW-005	C r5 =	0.00010 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00010 (mg/L)
concentration in Colby Lake	C cl =	0.00010 (mg/L)	

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case	Year 5			
Parameter	Calcium			
Input concentration data	concentration of surface water into SW-001	C s1 =	17.0000 (mg/L)	
	concentration of surface water into SW-002	C s2 =	17.0000 (mg/L)	
	concentration of surface water into SW-003	C s3 =	17.0000 (mg/L)	
	concentration of surface water into SW-004	C s4 =	17.0000 (mg/L)	
	concentration of surface water into SW-004A	C s4A =	17.0000 (mg/L)	
	concentration of surface water into SW-005	C s5 =	17.0000 (mg/L)	
	concentration of surface water into USGS Gage	C s6 =	17.0000 (mg/L)	
	concentration of surface water into Colby Lake	C scl =	17.0000 (mg/L)	
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	17.0000 (mg/L)	
	concentration of surface water discharges from upstream of PM-1	C sns =	24.5000 (mg/L)	
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)	
	concentration of ground water into SW-001	C g1 =	14.7900 (mg/L)	
	concentration of ground water into SW-002	C g2 =	14.7900 (mg/L)	
	concentration of ground water into SW-003	C g3 =	14.7900 (mg/L)	
	concentration of ground water into SW-004	C g4 =	14.7900 (mg/L)	
	concentration of ground water into SW-004A	C g4A =	14.7900 (mg/L)	
	concentration of ground water into SW-005	C g5 =	14.7900 (mg/L)	
	concentration of ground water into USGS Gage	C g6 =	14.7900 (mg/L)	
	concentration of ground water into Colby Lake	C gcl =	14.7900 (mg/L)	
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)	
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)	
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	342.4175 (mg/L)	
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	540.0000 (mg/L)	
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	540.0000 (mg/L)	
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	540.0000 (mg/L)	
	concentration of liner leakage from LOSP	C gC4LO =	172.0123 (mg/L)	
	concentration of seepage from Overburden (Storage)	C gOS =	9.3700 (mg/L)	
	concentration of seepage from Overburden (Cat 1)	C gO12 =	15.8000 (mg/L)	
	concentration of liner leakage from Cat 1 sumps	C gC12s =	342.4175 (mg/L)	
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	540.0000 (mg/L)	
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	540.0000 (mg/L)	
	concentration of liner leakage from Cat 4 sumps	C gC4s =	540.0000 (mg/L)	
	concentration of liner leakage from LOSP sumps	C gC4LOs =	172.0123 (mg/L)	
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	9.3700 (mg/L)	
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	9.3700 (mg/L)	
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	14.7900 (mg/L)	
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	14.7900 (mg/L)	
	concentration of leakage from RTH Pond - PW3	C gRTHp =	14.7900 (mg/L)	
	concentration of liner leakage from WWTF ponc	C_gWTFp =	235.9438 (mg/L)	
				Average Flow
	Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	2,174.76906 (mg/s)
		mass flux of ground water into SW-001	M g1 =	75.34026 (mg/s)
mass flux of surface discharges from upstream of PM-1		M sns =	693.35000 (mg/s)	
mass flux of surface water into SW-002		M s2 =	2,537.47438 (mg/s)	
mass flux of ground water into SW-002		M g2 =	141.09146 (mg/s)	
mass flux of surface water into SW-003		M s3 =	763.82131 (mg/s)	
mass flux of ground water into SW-003		M g3 =	44.53811 (mg/s)	
mass flux of seepage from East Pit to SW-003		M gep_003 =	#N/A (mg/s)	
mass flux of liner leakage from Cat 2/3 stockpile to SW-003		M gC3_003 =	0.54258 (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-003		M gC3LO_003 =	0.06792 (mg/s)	
mass flux of liner leakage from Cat 2/3 sumps to SW-003		M gC3s_003 =	0.00044 (mg/s)	
mass flux of surface water into SW-004		M s4 =	2,811.70732 (mg/s)	
mass flux of ground water into SW-004		M g4 =	132.05814 (mg/s)	
mass flux of seepage from East Pit to SW-004		M gep_004 =	#N/A (mg/s)	
mass flux of seepage from West Pit		M gwp =	#N/A (mg/s)	
mass flux of liner leakage from Cat 2/3 stockpile to SW-004		M gC3_004 =	- (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-004		M gC3LO_004 =	0.06792 (mg/s)	
mass flux of liner leakage from Cat 4 stockpile		M gC4 =	0.08521 (mg/s)	
mass flux of liner leakage from LOSP		M gC4LO =	0.03700 (mg/s)	
mass flux of seepage from Overburden (Storage)		M gOS =	20.27794 (mg/s)	
mass flux of liner leakage from Cat 3LO sumps to SW-004		M gC3LOs_004 =	0.00042 (mg/s)	
mass flux of liner leakage from Cat 4 sumps		M gC4s =	0.00038 (mg/s)	
mass flux of liner leakage from LOSP sumps		M gC4LOs =	0.00023 (mg/s)	
mass flux of seepage from Overburden Ponds - PW1		M gOp1 =	5.01400 (mg/s)	
mass flux of leakage from Haul Road Pond - PW2		M gHRp2 =	0.00563 (mg/s)	
mass flux of leakage from Haul Road Pond - PW4		M gHRp4 =	0.01206 (mg/s)	
mass flux of leakage from RTH Pond - PW3		M gRTHp =	0.00000 (mg/s)	
mass flux of liner leakage from WWTF pond		M gWTFp =	0.02842 (mg/s)	
mass flux of surface water into SW-004A		M s4A =	11,311.36915 (mg/s)	
mass flux of ground water into SW-004A		M g4A =	580.76605 (mg/s)	
mass flux of West Pit overflow		M sms =	#N/A (mg/s)	
mass flux of liner leakage from Cat 1 stockpile		M gC12 =	7.42750 (mg/s)	
mass flux of liner leakage from Cat 1 sumps		M gC12s =	0.00750 (mg/s)	
mass flux of seepage from Overburden (Cat 1)		M gO12 =	28.34565 (mg/s)	
mass flux of seepage from Overburden Pond - PW7		M gOp7 =	9.42024 (mg/s)	
mass flux of surface water into SW-005		M s5 =	17,381.32425 (mg/s)	
mass flux of ground water into SW-005		M g5 =	950.12439 (mg/s)	
mass flux of surface water into USGS Gage		M s6 =	1,866.55692 (mg/s)	
mass flux of ground water into USGS Gage		M g6 =	196.72179 (mg/s)	
mass flux of surface water into Colby Lake		M scl =	11,334.71600 (mg/s)	
mass flux of ground water into Colby Lake		M gcl =	489.71169 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP		M shl =	187.62900 (mg/s)	
			Average Flow	
Mass balance at each node	mass flux in river at SW-001	M r1 =	2,943.4593 (mg/s)	
	mass flux in river at SW-002	M r2 =	5,622.0252 (mg/s)	
	mass flux in river at SW-003	M r3 =	6,430.9955 (mg/s)	
	mass flux in river at SW-004	M r4 =	9,400.2902 (mg/s)	
	mass flux in river at SW-004A	M r4A =	21,337.6263 (mg/s)	
	mass flux in river at SW-005	M r5 =	39,669.0749 (mg/s)	
	mass flux in river at USGS Gage	M r6 =	41,732.3536 (mg/s)	
mass flux into Colby Lake	M cl =	53,744.4103 (mg/s)		
			Average Flow	
Convert mass flux to concentration	concentration in river at SW-001	C r1 =	18.24591 (mg/L)	
	concentration in river at SW-002	C r2 =	17.56200 (mg/L)	
	concentration in river at SW-003	C r3 =	17.47232 (mg/L)	
	concentration in river at SW-004	C r4 =	17.24532 (mg/L)	
	concentration in river at SW-004A	C r4A =	17.03528 (mg/L)	
	concentration in river at SW-005	C r5 =	16.95820 (mg/L)	
	concentration in river at USGS Gage	C r6 =	16.94835 (mg/L)	
	concentration in Colby Lake	C cl =	16.93686 (mg/L)	

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case		Year 5	
Parameter		Cadmium	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0001 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0001 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0001 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0001 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0001 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0001 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0001 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0001 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0001 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0001 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0001 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0001 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0001 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0001 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0001 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0001 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0001 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0001 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0002 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0002 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0149 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0001 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0002 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0002 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0149 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0001 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	0.0001 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0001 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0001 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0001 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0014 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	0.01279 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00051 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.00283 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	0.01493 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.00095 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.00449 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00030 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.01654 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.00089 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00013 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00003 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00000 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	0.06654 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.00393 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	0.00006 (mg/s)
	mass flux of surface water into SW-005	M_s5 =	0.10224 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.00642 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.01098 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.00133 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	0.06667 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.00331 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00110 (mg/s)
Mass balance at each node	Average Flow		
	mass flux in river at SW-001	M_r1 =	0.0161 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.0320 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.0368 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.0544 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.1249 (mg/s)
	mass flux in river at SW-005	M_r5 =	0.2336 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	0.2459 (mg/s)
	mass flux into Colby Lake	M_cl =	0.3170 (mg/s)
	Average Flow		
	concentration in river at SW-001	C_r1 =	0.00010 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00010 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00010 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00010 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00010 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00010 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00010 (mg/L)
	concentration in Colby Lake	C_cl =	0.00010 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 5 Chloride		
Input concentration data	concentration of surface water into SW-001	C s1 =	8.0000 (mg/L)
	concentration of surface water into SW-002	C s2 =	8.0000 (mg/L)
	concentration of surface water into SW-003	C s3 =	8.0000 (mg/L)
	concentration of surface water into SW-004	C s4 =	8.0000 (mg/L)
	concentration of surface water into SW-004A	C s4A =	8.0000 (mg/L)
	concentration of surface water into SW-005	C s5 =	8.0000 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	8.0000 (mg/L)
	concentration of surface water into Colby Lake	C scl =	8.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	8.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	1.6000 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	6.6000 (mg/L)
	concentration of ground water into SW-002	C g2 =	6.6000 (mg/L)
	concentration of ground water into SW-003	C g3 =	6.6000 (mg/L)
	concentration of ground water into SW-004	C g4 =	6.6000 (mg/L)
	concentration of ground water into SW-004A	C g4A =	6.6000 (mg/L)
	concentration of ground water into SW-005	C g5 =	6.6000 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	6.6000 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	6.6000 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	59.8617 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	47.7482 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	41.4184 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	9.1329 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.5137 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	5.3500 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	2.3300 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	59.8617 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	47.7482 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	41.4184 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	9.1329 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.5137 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	5.3500 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	5.3500 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	6.6000 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	6.6000 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	6.6000 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	32.8400 (mg/L)
		Average Flow	
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	1,023.42074 (mg/s)
	mass flux of ground water into SW-001	M g1 =	33.62040 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	45.28000 (mg/s)
	mass flux of surface water into SW-002	M s2 =	1,194.10559 (mg/s)
	mass flux of ground water into SW-002	M g2 =	62.96171 (mg/s)
	mass flux of surface water into SW-003	M s3 =	359.44532 (mg/s)
	mass flux of ground water into SW-003	M g3 =	19.87502 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.04798 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00521 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00004 (mg/s)
	mass flux of surface water into SW-004	M s4 =	1,323.15639 (mg/s)
	mass flux of ground water into SW-004	M g4 =	58.93061 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00521 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00144 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00011 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	11.57812 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00003 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00001 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	2.86285 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00251 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00538 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00396 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	5,322.99725 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	259.16538 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	1.29848 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00131 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	4.18009 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	5.37868 (mg/s)
	mass flux of surface water into SW-005	M s5 =	8,179.44670 (mg/s)
	mass flux of ground water into SW-005	M g5 =	423.99060 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	878.37973 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	87.78660 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	5,333.98400 (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	218.53260 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl =	88.29600 (mg/s)
		Average Flow	
Mass balance at each node	mass flux in river at SW-001	M r1 =	1,102.3211 (mg/s)
	mass flux in river at SW-002	M r2 =	2,359.3884 (mg/s)
	mass flux in river at SW-003	M r3 =	2,738.7620 (mg/s)
	mass flux in river at SW-004	M r4 =	4,135.3068 (mg/s)
	mass flux in river at SW-004A	M r4A =	9,728.3298 (mg/s)
	mass flux in river at SW-005	M r5 =	18,331.7671 (mg/s)
	mass flux in river at USGS Gage	M r6 =	19,297.9334 (mg/s)
mass flux into Colby Lake	M cl =	24,938.7460 (mg/s)	
		Average Flow	
Convert mass flux to concentration	concentration in river at SW-001	C r1 =	6.83307 (mg/L)
	concentration in river at SW-002	C r2 =	7.37022 (mg/L)
	concentration in river at SW-003	C r3 =	7.44092 (mg/L)
	concentration in river at SW-004	C r4 =	7.58644 (mg/L)
	concentration in river at SW-004A	C r4A =	7.76679 (mg/L)
	concentration in river at SW-005	C r5 =	7.83668 (mg/L)
	concentration in river at USGS Gage	C r6 =	7.83728 (mg/L)
	concentration in Colby Lake	C cl =	7.85913 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case		Year 5	
Parameter		Cobalt	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0005 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0005 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0005 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0005 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0005 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0005 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0005 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0005 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0005 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0005 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0017 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0017 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0017 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0017 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0017 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0017 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0017 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0017 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0100 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0520 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0520 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0520 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	2.0764 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0011 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.0013 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0100 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0520 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0520 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0520 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	2.0764 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0011 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	0.0011 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0017 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0017 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0017 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.2860 (mg/L)
Convert concentration to mass flux	Average Flow		
	mass flux of surface water into SW-001	M_s1 =	0.06396 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00841 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.01415 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	0.07463 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.01574 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.02247 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00497 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00005 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.08270 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.01473 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00001 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00045 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00240 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00059 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00003 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	0.33269 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.06479 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.00022 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.00233 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	0.00112 (mg/s)
	mass flux of surface water into SW-005	M_s5 =	0.51122 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.10600 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.05490 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.02195 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	0.33337 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.05463 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00552 (mg/s)
Mass balance at each node	Average Flow		
	mass flux in river at SW-001	M_r1 =	0.0865 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.1769 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.2044 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.3053 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.7065 (mg/s)
	mass flux in river at SW-005	M_r5 =	1.3237 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	1.4005 (mg/s)
	mass flux into Colby Lake	M_cl =	1.7940 (mg/s)
	Average Flow		
	concentration in river at SW-001	C_r1 =	0.00054 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00055 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00056 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00056 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00056 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00057 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00057 (mg/L)
	concentration in Colby Lake	C_cl =	0.00057 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 5 Copper		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0017 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0017 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0017 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0017 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0017 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0017 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0017 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0017 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0190 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0012 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0030 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0030 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0030 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0030 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0030 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0030 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0030 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0030 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0920 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0920 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0920 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0920 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.5001 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0214 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.0170 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0920 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0920 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0920 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0920 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.5001 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0214 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	0.0214 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0030 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0030 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0030 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.1092 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	0.21748 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.01503 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.03509 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	0.25375 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.02814 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.07638 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00888 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00009 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.28117 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.02634 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00001 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00011 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.04640 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.01147 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00001 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	1.13114 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.11584 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.00200 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.03050 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	0.02155 (mg/s)
	mass flux of surface water into SW-005	M_s5 =	1.73813 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.18951 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.18666 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.03924 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	1.13347 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.09768 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.20970 (mg/s)
Mass balance at each node	mass flux in river at SW-001	M_r1 =	0.2676 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.5495 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.6349 (mg/s)
	mass flux in river at SW-004	M_r4 =	1.0004 (mg/s)
	mass flux in river at SW-004A	M_r4A =	2.3014 (mg/s)
	mass flux in river at SW-005	M_r5 =	4.2281 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	4.4550 (mg/s)
	mass flux into Colby Lake	M_cl =	5.8958 (mg/s)
Convert mass flux to concentration	concentration in river at SW-001	C_r1 =	0.00166 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00172 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00172 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00184 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00184 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00181 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00181 (mg/L)
	concentration in Colby Lake	C_cl =	0.00186 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 5 Fluoride		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0700 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0700 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0700 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0700 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0700 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0700 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0700 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0700 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0700 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.1400 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.2800 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.2800 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.2800 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.2800 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.2800 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.2800 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.2800 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.2800 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.0624 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.0621 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0621 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0621 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.0627 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.2239 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.4200 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.0624 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.0621 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.0621 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0621 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0627 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.2239 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	0.2239 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.2800 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.2800 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.2800 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.1706 (mg/L)
Convert concentration to mass flux	Average Flow		
	mass flux of surface water into SW-001	M s1 =	8.95493 (mg/s)
	mass flux of ground water into SW-001	M g1 =	1.42632 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	3.96200 (mg/s)
	mass flux of surface water into SW-002	M s2 =	10.44842 (mg/s)
	mass flux of ground water into SW-002	M g2 =	2.67110 (mg/s)
	mass flux of surface water into SW-003	M s3 =	3.14515 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.84318 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.00006 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	11.57762 (mg/s)
	mass flux of ground water into SW-004	M g4 =	2.50009 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00001 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.48453 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.11981 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00011 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00023 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00002 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	46.57623 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	10.99489 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	0.00135 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	0.75349 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	0.22509 (mg/s)
	mass flux of surface water into SW-005	M s5 =	71.57016 (mg/s)
	mass flux of ground water into SW-005	M g5 =	17.98748 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	7.68582 (mg/s)
mass flux of ground water into USGS Gage	M g6 =	3.72428 (mg/s)	
mass flux of surface water into Colby Lake	M scl =	46.67236 (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	9.27108 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.77259 (mg/s)	
Mass balance at each node	Average Flow		
	mass flux in river at SW-001	M r1 =	14.3433 (mg/s)
	mass flux in river at SW-002	M r2 =	27.4628 (mg/s)
	mass flux in river at SW-003	M r3 =	31.4512 (mg/s)
	mass flux in river at SW-004	M r4 =	46.1336 (mg/s)
	mass flux in river at SW-004A	M r4A =	104.6847 (mg/s)
	mass flux in river at SW-005	M r5 =	194.2423 (mg/s)
	mass flux in river at USGS Gage	M r6 =	205.6524 (mg/s)
Convert mass flux to concentration	Average Flow		
	concentration in river at SW-001	C r1 =	0.08891 (mg/L)
	concentration in river at SW-002	C r2 =	0.08579 (mg/L)
	concentration in river at SW-003	C r3 =	0.08545 (mg/L)
	concentration in river at SW-004	C r4 =	0.08463 (mg/L)
	concentration in river at SW-004A	C r4A =	0.08358 (mg/L)
	concentration in river at SW-005	C r5 =	0.08304 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.08352 (mg/L)
	concentration in Colby Lake	C cl =	0.08268 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case		Year 5	
Parameter		Iron	
Input concentration data	concentration of surface water into SW-001	C_s1 =	1.6000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	1.6000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	1.6000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	1.6000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	1.6000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	1.6000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	1.6000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	1.6000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	1.6000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0300 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	2.8440 (mg/L)
	concentration of ground water into SW-002	C_g2 =	2.8440 (mg/L)
	concentration of ground water into SW-003	C_g3 =	2.8440 (mg/L)
	concentration of ground water into SW-004	C_g4 =	2.8440 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	2.8440 (mg/L)
	concentration of ground water into SW-005	C_g5 =	2.8440 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	2.8440 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	2.8440 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.8100 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.8100 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.8100 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.8100 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	235.0000 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.2255 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.1500 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.8100 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.8100 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.8100 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.8100 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	235.0000 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.2255 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	0.2255 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	2.8440 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	2.8440 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	2.8440 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	18.6742 (mg/L)
Convert concentration to mass flux	Average Flow		
	mass flux of surface water into SW-001	M_s1 =	204.68415 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	14.48734 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.84900 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	238.82112 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	27.13077 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	71.88906 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	8.56433 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00081 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00010 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	264.63128 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	25.39374 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00010 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00013 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.05055 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.48801 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00031 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.12067 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00108 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00232 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00225 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	1,064.59945 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	111.67672 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.01757 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00002 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.26910 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	0.22671 (mg/s)
	mass flux of surface water into SW-005	M_s5 =	1,635.88934 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	182.70140 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	175.67595 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	37.82804 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	1,066.79680 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	94.16768 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	17.65920 (mg/s)
Mass balance at each node	Average Flow		
	mass flux in river at SW-001	M_r1 =	220.0205 (mg/s)
	mass flux in river at SW-002	M_r2 =	485.9724 (mg/s)
	mass flux in river at SW-003	M_r3 =	566.4267 (mg/s)
	mass flux in river at SW-004	M_r4 =	857.1171 (mg/s)
	mass flux in river at SW-004A	M_r4A =	2,033.9067 (mg/s)
	mass flux in river at SW-005	M_r5 =	3,852.4974 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	4,066.0014 (mg/s)
Convert mass flux to concentration	Average Flow		
	concentration in river at SW-001	C_r1 =	1.36386 (mg/L)
	concentration in river at SW-002	C_r2 =	1.51807 (mg/L)
	concentration in river at SW-003	C_r3 =	1.53892 (mg/L)
	concentration in river at SW-004	C_r4 =	1.57243 (mg/L)
	concentration in river at SW-004A	C_r4A =	1.62381 (mg/L)
	concentration in river at SW-005	C_r5 =	1.64691 (mg/L)
	concentration in river at USGS Gage	C_r6 =	1.65129 (mg/L)
	concentration in Colby Lake	C_cl =	1.65278 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 5 Hardness			
Input concentration data	concentration of surface water into SW-001	C s1 =	110.0000 (mg/L)	
	concentration of surface water into SW-002	C s2 =	110.0000 (mg/L)	
	concentration of surface water into SW-003	C s3 =	110.0000 (mg/L)	
	concentration of surface water into SW-004	C s4 =	110.0000 (mg/L)	
	concentration of surface water into SW-004A	C s4A =	110.0000 (mg/L)	
	concentration of surface water into SW-005	C s5 =	110.0000 (mg/L)	
	concentration of surface water into USGS Gage	C s6 =	110.0000 (mg/L)	
	concentration of surface water into Colby Lake	C scl =	110.0000 (mg/L)	
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	110.0000 (mg/L)	
	concentration of surface water discharges from upstream of PM-1	C sns =	110.0000 (mg/L)	
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)	
	concentration of ground water into SW-001	C g1 =	66.4200 (mg/L)	
	concentration of ground water into SW-002	C g2 =	66.4200 (mg/L)	
	concentration of ground water into SW-003	C g3 =	66.4200 (mg/L)	
	concentration of ground water into SW-004	C g4 =	66.4200 (mg/L)	
	concentration of ground water into SW-004A	C g4A =	66.4200 (mg/L)	
	concentration of ground water into SW-005	C g5 =	66.4200 (mg/L)	
	concentration of ground water into USGS Gage	C g6 =	66.4200 (mg/L)	
	concentration of ground water into Colby Lake	C gcl =	66.4200 (mg/L)	
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)	
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)	
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	1,116.1608 (mg/L)	
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	1,729.3495 (mg/L)	
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	1,729.3495 (mg/L)	
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	1,729.3495 (mg/L)	
	concentration of liner leakage from LOSP	C gC4LO =	1,493.8917 (mg/L)	
	concentration of seepage from Overburden (Storage)	C gOS =	43.5200 (mg/L)	
	concentration of seepage from Overburden (Cat 1)	C gO12 =	71.5000 (mg/L)	
	concentration of liner leakage from Cat 1 sumps	C gC12s =	1,116.1608 (mg/L)	
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	1,729.3495 (mg/L)	
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	1,729.3495 (mg/L)	
	concentration of liner leakage from Cat 4 sumps	C gC4s =	1,729.3495 (mg/L)	
	concentration of liner leakage from LOSP sumps	C gC4LOs =	1,493.8917 (mg/L)	
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	43.5200 (mg/L)	
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	43.5200 (mg/L)	
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	66.4200 (mg/L)	
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	66.4200 (mg/L)	
	concentration of leakage from RTH Pond - PW3	C gRTHp =	66.4200 (mg/L)	
	concentration of liner leakage from WWTF ponc	C_gWTFp =	886.8372 (mg/L)	
				Average Flow
	Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	14,072.03511 (mg/s)
		mass flux of ground water into SW-001	M g1 =	338.34348 (mg/s)
mass flux of surface discharges from upstream of PM-1		M sns =	3,113.00000 (mg/s)	
mass flux of surface water into SW-002		M s2 =	16,418.95184 (mg/s)	
mass flux of ground water into SW-002		M g2 =	633.62374 (mg/s)	
mass flux of surface water into SW-003		M s3 =	4,942.37320 (mg/s)	
mass flux of ground water into SW-003		M g3 =	200.01496 (mg/s)	
mass flux of seepage from East Pit to SW-003		M gep_003 =	#N/A (mg/s)	
mass flux of liner leakage from Cat 2/3 stockpile to SW-003		M gC3_003 =	1,73761 (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-003		M gC3LO_003 =	0.21752 (mg/s)	
mass flux of liner leakage from Cat 2/3 sumps to SW-003		M gC3s_003 =	0.00139 (mg/s)	
mass flux of surface water into SW-004		M s4 =	18,193.40032 (mg/s)	
mass flux of ground water into SW-004		M g4 =	593.05624 (mg/s)	
mass flux of seepage from East Pit to SW-004		M gep_004 =	#N/A (mg/s)	
mass flux of seepage from West Pit		M gwp =	#N/A (mg/s)	
mass flux of liner leakage from Cat 2/3 stockpile to SW-004		M gC3_004 =	- (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-004		M gC3LO_004 =	0.21752 (mg/s)	
mass flux of liner leakage from Cat 4 stockpile		M gC4 =	0.27287 (mg/s)	
mass flux of liner leakage from LOSP		M gC4LO =	0.32138 (mg/s)	
mass flux of seepage from Overburden (Storage)		M gOS =	94.18314 (mg/s)	
mass flux of liner leakage from Cat 3LO sumps to SW-004		M gC3LOs_004 =	0.00133 (mg/s)	
mass flux of liner leakage from Cat 4 sumps		M gC4s =	0.00121 (mg/s)	
mass flux of liner leakage from LOSP sumps		M gC4LOs =	0.00199 (mg/s)	
mass flux of seepage from Overburden Ponds - PW1		M gOp1 =	23.28806 (mg/s)	
mass flux of leakage from Haul Road Pond - PW2		M gHRp2 =	0.02527 (mg/s)	
mass flux of leakage from Haul Road Pond - PW4		M gHRp4 =	0.05414 (mg/s)	
mass flux of leakage from RTH Pond - PW3		M gRTHp =	0.00002 (mg/s)	
mass flux of liner leakage from WWTF pond		M gWTFp =	0.10682 (mg/s)	
mass flux of surface water into SW-004A		M s4A =	73,191.21216 (mg/s)	
mass flux of ground water into SW-004A		M g4A =	2,608.14612 (mg/s)	
mass flux of West Pit overflow		M sms =	#N/A (mg/s)	
mass flux of liner leakage from Cat 1 stockpile		M gC12 =	24.21104 (mg/s)	
mass flux of liner leakage from Cat 1 sumps		M gC12s =	0.02446 (mg/s)	
mass flux of seepage from Overburden (Cat 1)		M gO12 =	128.27305 (mg/s)	
mass flux of seepage from Overburden Pond - PW7		M gOp7 =	43.75333 (mg/s)	
mass flux of surface water into SW-005		M s5 =	112,467.39218 (mg/s)	
mass flux of ground water into SW-005		M g5 =	4,266.88722 (mg/s)	
mass flux of surface water into USGS Gage		M s6 =	12,077.72128 (mg/s)	
mass flux of ground water into USGS Gage		M g6 =	883.45242 (mg/s)	
mass flux of surface water into Colby Lake		M scl =	73,342.28000 (mg/s)	
mass flux of ground water into Colby Lake		M gcl =	2,199.23262 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP		M shl =	1,214.07000 (mg/s)	
Mass balance at each node	Average Flow			
	mass flux in river at SW-001	M r1 =	17,523.3786 (mg/s)	
	mass flux in river at SW-002	M r2 =	34,575.9542 (mg/s)	
	mass flux in river at SW-003	M r3 =	39,720.2969 (mg/s)	
	mass flux in river at SW-004	M r4 =	58,625.2292 (mg/s)	
	mass flux in river at SW-004A	M r4A =	134,620.8493 (mg/s)	
	mass flux in river at SW-005	M r5 =	251,355.1287 (mg/s)	
Convert mass flux to concentration	mass flux in river at USGS Gage	M r6 =	264,316.3024 (mg/s)	
	mass flux into Colby Lake	M cl =	341,071.8850 (mg/s)	
	Average Flow			
	concentration in river at SW-001	C r1 =	108.62389 (mg/L)	
	concentration in river at SW-002	C r2 =	108.00785 (mg/L)	
	concentration in river at SW-003	C r3 =	107.91577 (mg/L)	
	concentration in river at SW-004	C r4 =	107.55105 (mg/L)	
	concentration in river at SW-004A	C r4A =	107.47697 (mg/L)	
	concentration in river at SW-005	C r5 =	107.45221 (mg/L)	
	concentration in river at USGS Gage	C r6 =	107.34417 (mg/L)	
	concentration in Colby Lake	C cl =	107.48442 (mg/L)	

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 5 Potassium		
Input concentration data	concentration of surface water into SW-001	C s1 =	1.3000 (mg/L)
	concentration of surface water into SW-002	C s2 =	1.3000 (mg/L)
	concentration of surface water into SW-003	C s3 =	1.3000 (mg/L)
	concentration of surface water into SW-004	C s4 =	1.3000 (mg/L)
	concentration of surface water into SW-004A	C s4A =	1.3000 (mg/L)
	concentration of surface water into SW-005	C s5 =	1.3000 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	1.3000 (mg/L)
	concentration of surface water into Colby Lake	C scl =	1.3000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	1.3000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	2.7000 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	1.7500 (mg/L)
	concentration of ground water into SW-002	C g2 =	1.7500 (mg/L)
	concentration of ground water into SW-003	C g3 =	1.7500 (mg/L)
	concentration of ground water into SW-004	C g4 =	1.7500 (mg/L)
	concentration of ground water into SW-004A	C g4A =	1.7500 (mg/L)
	concentration of ground water into SW-005	C g5 =	1.7500 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	1.7500 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	1.7500 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	49.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	49.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	49.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	49.0000 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	38.0000 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	2.2600 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	4.4500 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	49.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	49.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	49.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	49.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	38.0000 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	2.2600 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	2.2600 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	1.7500 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	1.7500 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	1.7500 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	22.2394 (mg/L)
			Average Flow
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	166.30587 (mg/s)
	mass flux of ground water into SW-001	M g1 =	8.91450 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	76.41000 (mg/s)
	mass flux of surface water into SW-002	M s2 =	194.04216 (mg/s)
	mass flux of ground water into SW-002	M g2 =	16.69439 (mg/s)
	mass flux of surface water into SW-003	M s3 =	58.40987 (mg/s)
	mass flux of ground water into SW-003	M g3 =	5.26989 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.04923 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00616 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00004 (mg/s)
	mass flux of surface water into SW-004	M s4 =	215.01291 (mg/s)
	mass flux of ground water into SW-004	M g4 =	15.62554 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00616 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00773 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00817 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	4.89094 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00004 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00003 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00005 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	1.20935 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00067 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00143 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00268 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	864.98705 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	68.71809 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	1.06288 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00107 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	7.98343 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	2.27212 (mg/s)
	mass flux of surface water into SW-005	M s5 =	1,329.16009 (mg/s)
	mass flux of ground water into SW-005	M g5 =	112.42175 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	142.73671 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	23.27675 (mg/s)
mass flux of surface water into Colby Lake	M scl =	866.77240 (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	57.94425 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	14.34810 (mg/s)	
			Average Flow
Mass balance at each node	mass flux in river at SW-001	M r1 =	251.6304 (mg/s)
	mass flux in river at SW-002	M r2 =	462.3669 (mg/s)
	mass flux in river at SW-003	M r3 =	526.1021 (mg/s)
	mass flux in river at SW-004	M r4 =	762.8678 (mg/s)
	mass flux in river at SW-004A	M r4A =	1,707.8925 (mg/s)
	mass flux in river at SW-005	M r5 =	3,149.4743 (mg/s)
	mass flux in river at USGS Gage	M r6 =	3,315.4878 (mg/s)
mass flux into Colby Lake	M cl =	4,254.5525 (mg/s)	
			Average Flow
Convert mass flux to concentration	concentration in river at SW-001	C r1 =	1.55981 (mg/L)
	concentration in river at SW-002	C r2 =	1.44433 (mg/L)
	concentration in river at SW-003	C r3 =	1.42936 (mg/L)
	concentration in river at SW-004	C r4 =	1.39952 (mg/L)
	concentration in river at SW-004A	C r4A =	1.36353 (mg/L)
	concentration in river at SW-005	C r5 =	1.34637 (mg/L)
	concentration in river at USGS Gage	C r6 =	1.34649 (mg/L)
	concentration in Colby Lake	C cl =	1.34077 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case		Year 5	
Parameter		Magnesium	
Input concentration data	concentration of surface water into SW-001	C_s1 =	8.0000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	8.0000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	8.0000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	8.0000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	8.0000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	8.0000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	8.0000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	8.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	8.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	10.5000 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	8.0200 (mg/L)
	concentration of ground water into SW-002	C_g2 =	8.0200 (mg/L)
	concentration of ground water into SW-003	C_g3 =	8.0200 (mg/L)
	concentration of ground water into SW-004	C_g4 =	8.0200 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	8.0200 (mg/L)
	concentration of ground water into SW-005	C_g5 =	8.0200 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	8.0200 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	8.0200 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	63.7272 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	93.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	93.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	93.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	258.7788 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	4.8800 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	9.0100 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	63.7272 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	93.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	93.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	93.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	258.7788 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	4.8800 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	4.8800 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	8.0200 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	8.0200 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	8.0200 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	72.5230 (mg/L)
Convert concentration to mass flux	Average Flow		
	mass flux of surface water into SW-001	M_s1 =	1,023.42074 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	40.85388 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	297.15000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	1,194.10559 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	76.50802 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	359.44532 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	24.15116 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.09344 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.01170 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00007 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	1,323.15639 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	71.60962 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.01170 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.01467 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.05567 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	10.56098 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00007 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00007 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00034 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	2.61135 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00305 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00654 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00874 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	5,322.99725 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	314.92520 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	1.38233 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00140 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	16.16420 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	4.90616 (mg/s)
	mass flux of surface water into SW-005	M_s5 =	8,179.44670 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	515.21282 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	878.37973 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	106.67402 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	5,333.98400 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	265.55022 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	88.29600 (mg/s)
Mass balance at each node	Average Flow		
	mass flux in river at SW-001	M_r1 =	1,361.4248 (mg/s)
	mass flux in river at SW-002	M_r2 =	2,632.0382 (mg/s)
	mass flux in river at SW-003	M_r3 =	3,015.7389 (mg/s)
	mass flux in river at SW-004	M_r4 =	4,423.7791 (mg/s)
	mass flux in river at SW-004A	M_r4A =	10,084.1556 (mg/s)
	mass flux in river at SW-005	M_r5 =	18,778.8152 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	19,763.8689 (mg/s)
Convert mass flux to concentration	Average Flow		
	concentration in river at SW-001	C_r1 =	8.43920 (mg/L)
	concentration in river at SW-002	C_r2 =	8.22192 (mg/L)
	concentration in river at SW-003	C_r3 =	8.19344 (mg/L)
	concentration in river at SW-004	C_r4 =	8.11565 (mg/L)
	concentration in river at SW-004A	C_r4A =	8.05087 (mg/L)
	concentration in river at SW-005	C_r5 =	8.02779 (mg/L)
	concentration in river at USGS Gage	C_r6 =	8.02650 (mg/L)
	concentration in Colby Lake	C_cl =	8.02078 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case		Year 5	
Parameter	Manganese		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.1500 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.1500 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.1500 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.1500 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.1500 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.1500 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.1500 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.1500 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.1500 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0086 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.1240 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.1240 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.1240 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.1240 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.1240 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.1240 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.1240 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.1240 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.1509 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.7500 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.7500 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.7500 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	5.3146 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.1604 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.1160 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.1509 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.7500 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.7500 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.7500 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	5.3146 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.1604 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	0.1604 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.1240 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.1240 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.1240 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.9101 (mg/L)
Convert concentration to mass flux	Average Flow		
	mass flux of surface water into SW-001	M_s1 =	19.18914 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.63166 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.24338 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	22.38948 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	1.18292 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	6.73960 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.37341 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00075 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00009 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	24.80918 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	1.10718 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00009 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00012 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00114 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.34711 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00001 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.08583 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00005 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00010 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00011 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	98.80620 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	4.86917 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.00327 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.20811 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	0.16125 (mg/s)
	mass flux of surface water into SW-005	M_s5 =	153.36463 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	7.96588 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	16.46962 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	1.64932 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	100.01220 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	4.10576 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	1.65555 (mg/s)
Mass balance at each node	Average Flow		
	mass flux in river at SW-001	M_r1 =	20.0642 (mg/s)
	mass flux in river at SW-002	M_r2 =	43.6366 (mg/s)
	mass flux in river at SW-003	M_r3 =	50.7504 (mg/s)
	mass flux in river at SW-004	M_r4 =	77.1013 (mg/s)
	mass flux in river at SW-004A	M_r4A =	182.1493 (mg/s)
	mass flux in river at SW-005	M_r5 =	343.4799 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	361.5968 (mg/s)
Convert mass flux to concentration	Average Flow		
	concentration in river at SW-001	C_r1 =	0.12437 (mg/L)
	concentration in river at SW-002	C_r2 =	0.13631 (mg/L)
	concentration in river at SW-003	C_r3 =	0.13788 (mg/L)
	concentration in river at SW-004	C_r4 =	0.14145 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.14542 (mg/L)
	concentration in river at SW-005	C_r5 =	0.14683 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.14685 (mg/L)
	concentration in Colby Lake	C_cl =	0.14729 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case		Year 5	
Parameter		Sodium	
Input concentration data	concentration of surface water into SW-001	C_s1 =	2.5000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	2.5000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	2.5000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	2.5000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	2.5000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	2.5000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	2.5000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	2.5000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	2.5000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	4.8000 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	13.3300 (mg/L)
	concentration of ground water into SW-002	C_g2 =	13.3300 (mg/L)
	concentration of ground water into SW-003	C_g3 =	13.3300 (mg/L)
	concentration of ground water into SW-004	C_g4 =	13.3300 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	13.3300 (mg/L)
	concentration of ground water into SW-005	C_g5 =	13.3300 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	13.3300 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	13.3300 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	103.0729 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	403.6786 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	413.5691 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	235.2970 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	32.4709 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	4.6000 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	7.1900 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	103.0729 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	403.6786 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	413.5691 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	235.2970 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	32.4709 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	4.6000 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	4.6000 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	13.3300 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	13.3300 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	13.3300 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	153.0910 (mg/L)
Convert concentration to mass flux	Average Flow		
	mass flux of surface water into SW-001	M_s1 =	319.81898 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	67.90302 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	135.84000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	373.15800 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	127.16357 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	112.32666 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	40.14151 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.40561 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.05202 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00033 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	413.48637 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	119.02198 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.05202 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.03713 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00699 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	9.95502 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00032 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00016 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00004 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	2.46151 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00507 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.01087 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.01844 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	1.663.43664 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	523.43553 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	2.23579 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00226 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	12.89907 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	4.62466 (mg/s)
	mass flux of surface water into SW-005	M_s5 =	2.556.07710 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	856.33253 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	274.49367 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	177.30233 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	1.666.87000 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	441.36963 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	27.59250 (mg/s)
Mass balance at each node	Average Flow		
	mass flux in river at SW-001	M_r1 =	523.5620 (mg/s)
	mass flux in river at SW-002	M_r2 =	1.023.8836 (mg/s)
	mass flux in river at SW-003	M_r3 =	1.176.8097 (mg/s)
	mass flux in river at SW-004	M_r4 =	1.721.8656 (mg/s)
	mass flux in river at SW-004A	M_r4A =	3.928.4996 (mg/s)
	mass flux in river at SW-005	M_r5 =	7.340.9092 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	7.792.7052 (mg/s)
	mass flux into Colby Lake	M_cl =	9.928.5373 (mg/s)
	Average Flow		
	concentration in river at SW-001	C_r1 =	3.24546 (mg/L)
	concentration in river at SW-002	C_r2 =	3.19839 (mg/L)
	concentration in river at SW-003	C_r3 =	3.19727 (mg/L)
	concentration in river at SW-004	C_r4 =	3.15885 (mg/L)
	concentration in river at SW-004A	C_r4A =	3.13639 (mg/L)
	concentration in river at SW-005	C_r5 =	3.13818 (mg/L)
	concentration in river at USGS Gage	C_r6 =	3.16477 (mg/L)
	concentration in Colby Lake	C_cl =	3.12885 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 5 Nickel		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0016 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0016 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0016 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0016 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0016 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0016 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0016 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0016 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0033 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0016 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0163 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0163 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0163 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0163 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0163 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0163 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0163 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0163 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0651 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.8600 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.8600 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.8600 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	26.9019 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0080 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.0190 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0651 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.8600 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_g3LOs =	0.8600 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.8600 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	26.9019 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0080 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	0.0080 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0163 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0163 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0163 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	3.7296 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	0.19957 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.08293 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.04387 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	0.23285 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.15531 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.07009 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.04903 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00086 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00011 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.25802 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.14536 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00011 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00014 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00579 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.01725 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00004 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00426 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00001 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00001 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00045 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	1.03798 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.63927 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.00141 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.03409 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	0.00801 (mg/s)
	mass flux of surface water into SW-005	M_s5 =	1.59499 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	1.04584 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.17128 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.21654 (mg/s)
mass flux of surface water into Colby Lake	M_scl =	1.04013 (mg/s)	
mass flux of ground water into Colby Lake	M_gcl =	0.53905 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.03642 (mg/s)	
Mass balance at each node	Average Flow		
	mass flux in river at SW-001	M_r1 =	0.3264 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.7145 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.8346 (mg/s)
	mass flux in river at SW-004	M_r4 =	1.2660 (mg/s)
	mass flux in river at SW-004A	M_r4A =	2.9868 (mg/s)
	mass flux in river at SW-005	M_r5 =	5.6276 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	6.0155 (mg/s)
	mass flux into Colby Lake	M_cl =	7.6311 (mg/s)
	Average Flow		
	concentration in river at SW-001	C_r1 =	0.00202 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00223 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00227 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00232 (mg/L)
concentration in river at SW-004A	C_r4A =	0.00238 (mg/L)	
concentration in river at SW-005	C_r5 =	0.00241 (mg/L)	
concentration in river at USGS Gage	C_r6 =	0.00244 (mg/L)	
concentration in Colby Lake	C_cl =	0.00240 (mg/L)	

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 5 Lead		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0005 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0005 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0005 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0005 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0005 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0005 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0005 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0005 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0005 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0002 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0011 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0011 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0011 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0011 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0011 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0011 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0011 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0011 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.0078 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.0148 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0152 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0330 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.0452 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0007 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	(mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.0078 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.0148 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.0152 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0330 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0452 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0007 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	0.0007 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0011 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0011 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0011 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	0.0133 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	0.06396 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.00571 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.00425 (mg/s)
	mass flux of surface water into SW-002	M s2 =	0.07463 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.01068 (mg/s)
	mass flux of surface water into SW-003	M s3 =	0.02247 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.00337 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	0.08270 (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.01000 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00001 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.00146 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.00036 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00000 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	0.33269 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.04398 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	0.00017 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	0.00068 (mg/s)
	mass flux of surface water into SW-005	M s5 =	0.51122 (mg/s)
	mass flux of ground water into SW-005	M g5 =	0.07195 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	0.05490 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.01490 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	0.33337 (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	0.03708 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.00552 (mg/s)
Mass balance at each node	mass flux in river at SW-001	M r1 =	0.0739 (mg/s)
	mass flux in river at SW-002	M r2 =	0.1592 (mg/s)
	mass flux in river at SW-003	M r3 =	0.1851 (mg/s)
	mass flux in river at SW-004	M r4 =	0.2796 (mg/s)
	mass flux in river at SW-004A	M r4A =	0.6571 (mg/s)
	mass flux in river at SW-005	M r5 =	1.2403 (mg/s)
	mass flux in river at USGS Gage	M r6 =	1.3101 (mg/s)
mass flux into Colby Lake	M cl =	1.6861 (mg/s)	
Convert mass flux to concentration	concentration in river at SW-001	C r1 =	0.00046 (mg/L)
	concentration in river at SW-002	C r2 =	0.00050 (mg/L)
	concentration in river at SW-003	C r3 =	0.00050 (mg/L)
	concentration in river at SW-004	C r4 =	0.00051 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00052 (mg/L)
	concentration in river at SW-005	C r5 =	0.00053 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00053 (mg/L)
	concentration in Colby Lake	C cl =	0.00053 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case	Year 5		
Parameter	Antimony		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0015 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0015 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0015 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0015 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0015 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0015 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0015 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0015 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0015 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0015 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0015 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0015 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0015 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0015 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0015 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0015 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0015 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0015 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.0800 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.0800 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0800 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0800 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.0156 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0003 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.0004 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.0800 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.0800 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.0800 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0800 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0156 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0003 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	0.0003 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0015 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0015 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0015 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0362 (mg/L)
Average Flow			
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	0.19189 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.00764 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.04245 (mg/s)
	mass flux of surface water into SW-002	M s2 =	0.22389 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.01431 (mg/s)
	mass flux of surface water into SW-003	M s3 =	0.06740 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.00452 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.00008 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	0.24809 (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.01339 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00001 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.00065 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.00016 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00000 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	0.99806 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.05890 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	0.00174 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	0.00072 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	0.00030 (mg/s)
	mass flux of surface water into SW-005	M s5 =	1.53365 (mg/s)
	mass flux of ground water into SW-005	M g5 =	0.09636 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	0.16470 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.01995 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	1.00012 (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	0.04967 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.01656 (mg/s)
Average Flow			
Mass balance at each node	mass flux in river at SW-001	M r1 =	0.2420 (mg/s)
	mass flux in river at SW-002	M r2 =	0.4802 (mg/s)
	mass flux in river at SW-003	M r3 =	0.5522 (mg/s)
	mass flux in river at SW-004	M r4 =	0.8145 (mg/s)
	mass flux in river at SW-004A	M r4A =	1.8742 (mg/s)
	mass flux in river at SW-005	M r5 =	3.5042 (mg/s)
	mass flux in river at USGS Gage	M r6 =	3.6889 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M cl =	4.7552 (mg/s)
	concentration in river at SW-001	C r1 =	0.00150 (mg/L)
	concentration in river at SW-002	C r2 =	0.00150 (mg/L)
	concentration in river at SW-003	C r3 =	0.00150 (mg/L)
	concentration in river at SW-004	C r4 =	0.00149 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00150 (mg/L)
	concentration in river at SW-005	C r5 =	0.00150 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00150 (mg/L)
	concentration in Colby Lake	C cl =	0.00150 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case		Year 5	
Parameter	Selenium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0005 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0005 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0005 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0005 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0005 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0005 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0005 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0005 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0005 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0005 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0019 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0019 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0019 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0019 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0019 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0019 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0019 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0019 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0029 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0029 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0029 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0029 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0029 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0004 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.0019 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0029 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0029 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0029 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0029 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0029 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0004 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	0.0004 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0019 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0019 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0019 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0024 (mg/L)
		Average Flow	
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	0.06396 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00973 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.01415 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	0.07463 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.01822 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.02247 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00575 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.08270 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.01705 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00096 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00024 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00000 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	0.33269 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.07500 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.00006 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.00341 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	0.00045 (mg/s)
	mass flux of surface water into SW-005	M_s5 =	0.51122 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.12270 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.05490 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.02540 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	0.33337 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.06324 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00552 (mg/s)
		Average Flow	
Mass balance at each node	mass flux in river at SW-001	M_r1 =	0.0878 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.1807 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.2089 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.3099 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.7215 (mg/s)
	mass flux in river at SW-005	M_r5 =	1.3554 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	1.4357 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	1.8378 (mg/s)
			Average Flow
	concentration in river at SW-001	C_r1 =	0.00054 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00056 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00057 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00057 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00058 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00058 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00058 (mg/L)
	concentration in Colby Lake	C_cl =	0.00058 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 5 Sulfate		
Input concentration data	concentration of surface water into SW-001	C_s1 =	9.0000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	9.0000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	9.0000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	9.0000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	9.0000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	9.0000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	9.0000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	9.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	9.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	22.0000 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	16.1300 (mg/L)
	concentration of ground water into SW-002	C_g2 =	16.1300 (mg/L)
	concentration of ground water into SW-003	C_g3 =	16.1300 (mg/L)
	concentration of ground water into SW-004	C_g4 =	16.1300 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	16.1300 (mg/L)
	concentration of ground water into SW-005	C_g5 =	16.1300 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	16.1300 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	16.1300 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	252.0359 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	2,340.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	2,340.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	2,340.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	3,321.3394 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	35.1700 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	68.3000 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	252.0359 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	2,340.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	2,340.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	2,340.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	3,321.3394 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	35.1700 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	35.1700 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	16.1300 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	16.1300 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	16.1300 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	960.9200 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	1,151.34833 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	82.16622 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	622.60000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	1,343.36879 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	153.87460 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	404.37599 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	48.57334 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	2,35118 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.29433 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00189 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	1,488.55094 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	144.02284 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.29433 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.36922 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.71451 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	76.11262 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00180 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00164 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00443 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	18.81988 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00614 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.01315 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.11574 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	5,988.37190 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	633.38448 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	5.46700 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00552 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	122.53216 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	35.35856 (mg/s)
	mass flux of surface water into SW-005	M_s5 =	9,201.87754 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	1,036.20733 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	988.17720 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	214.54513 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	6,000.73200 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	534.08043 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	99.33300 (mg/s)
Mass balance at each node	Average Flow		
	mass flux in river at SW-001	M_r1 =	1,856.1145 (mg/s)
	mass flux in river at SW-002	M_r2 =	3,353.3579 (mg/s)
	mass flux in river at SW-003	M_r3 =	3,808.9547 (mg/s)
	mass flux in river at SW-004	M_r4 =	5,537.9819 (mg/s)
	mass flux in river at SW-004A	M_r4A =	12,323.1015 (mg/s)
	mass flux in river at SW-005	M_r5 =	22,561.1864 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	23,763.9087 (mg/s)
Convert mass flux to concentration	Average Flow		
	concentration in river at SW-001	C_r1 =	11.50568 (mg/L)
	concentration in river at SW-002	C_r2 =	10.47517 (mg/L)
	concentration in river at SW-003	C_r3 =	10.34852 (mg/L)
	concentration in river at SW-004	C_r4 =	10.15972 (mg/L)
	concentration in river at SW-004A	C_r4A =	9.83837 (mg/L)
	concentration in river at SW-005	C_r5 =	9.64472 (mg/L)
	concentration in river at USGS Gage	C_r6 =	9.65100 (mg/L)
	concentration in Colby Lake	C_cl =	9.57956 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case	Year 5		
Parameter	Thallium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0004 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0004 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0004 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0004 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0004 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0004 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0004 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0004 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0004 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0003 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0000 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0000 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0000 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0000 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0000 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0000 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0000 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0000 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0001 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0000 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0001 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0000 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	0.0000 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0000 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0000 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0000 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0009 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	0.05117 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00002 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.00809 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	0.05971 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.00004 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.01797 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00001 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.06616 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.00004 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00009 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00002 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00000 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	0.26615 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.00016 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	0.00004 (mg/s)
	mass flux of surface water into SW-005	M_s5 =	0.40897 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.00026 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.04392 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.00005 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	0.26670 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.00013 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00441 (mg/s)
Mass balance at each node	Average Flow		
	mass flux in river at SW-001	M_r1 =	0.0593 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.1190 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.1370 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.2033 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.4697 (mg/s)
	mass flux in river at SW-005	M_r5 =	0.8769 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	0.9229 (mg/s)
	mass flux into Colby Lake	M_cl =	1.1941 (mg/s)
	Average Flow		
	concentration in river at SW-001	C_r1 =	0.00037 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00037 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00037 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00037 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00037 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00038 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00037 (mg/L)
	concentration in Colby Lake	C_cl =	0.00038 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case		Year 5	
Parameter		Vanadium	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0009 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0009 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0009 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0009 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0009 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0009 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0009 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0009 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0009 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0043 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0043 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0043 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0043 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0043 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0043 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0043 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0043 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0043 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0389 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.7203 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.7380 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0923 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0080 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0017 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.0014 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0389 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.7203 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.7380 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0923 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0080 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0017 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	0.0017 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0043 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0043 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0043 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.1932 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	0.11513 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.02190 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.12169 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	0.13434 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.04102 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.04044 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.01295 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00072 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00009 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.14886 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.03839 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00009 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00001 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00374 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00093 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00002 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	0.59884 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.16885 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.00084 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.00251 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	0.00174 (mg/s)
	mass flux of surface water into SW-005	M_s5 =	0.92019 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.27624 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.09882 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.05719 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	0.60007 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.14238 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00993 (mg/s)
Mass balance at each node	Average Flow		
	mass flux in river at SW-001	M_r1 =	0.2587 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.4341 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.4883 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.6803 (mg/s)
	mass flux in river at SW-004A	M_r4A =	1.4531 (mg/s)
	mass flux in river at SW-005	M_r5 =	2.6496 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	2.8056 (mg/s)
	mass flux into Colby Lake	M_cl =	3.5579 (mg/s)
	Average Flow		
	concentration in river at SW-001	C_r1 =	0.00160 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00136 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00133 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00125 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00116 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00113 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00114 (mg/L)
	concentration in Colby Lake	C_cl =	0.00112 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case	Year 5		
Parameter	Zinc		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0160 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0160 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0160 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0160 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0160 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0160 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0160 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0160 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0620 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0073 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0275 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0275 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0275 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0275 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0275 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0275 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0275 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0275 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.0900 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.0900 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0900 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0900 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	26.0000 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0046 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.0030 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.0900 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.0900 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.0900 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0900 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	26.0000 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0046 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	0.0046 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0275 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0275 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0275 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	2.0185 (mg/L)
Average Flow			
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	2.04684 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.14009 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.20744 (mg/s)
	mass flux of surface water into SW-002	M s2 =	2.38821 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.26234 (mg/s)
	mass flux of surface water into SW-003	M s3 =	0.71889 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.08281 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.00009 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	2.64631 (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.24554 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00001 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00559 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.00987 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00003 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.00244 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00001 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00002 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00024 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	10.64599 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	1.07986 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	0.00195 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	0.00538 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	0.00458 (mg/s)
	mass flux of surface water into SW-005	M s5 =	16.35889 (mg/s)
	mass flux of ground water into SW-005	M g5 =	1.76663 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	1.75676 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.36578 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	10.66797 (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	0.91055 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.68429 (mg/s)
Average Flow			
Mass balance at each node	mass flux in river at SW-001	M r1 =	2.3944 (mg/s)
	mass flux in river at SW-002	M r2 =	5.0449 (mg/s)
	mass flux in river at SW-003	M r3 =	5.8467 (mg/s)
	mass flux in river at SW-004	M r4 =	8.7568 (mg/s)
	mass flux in river at SW-004A	M r4A =	20.4946 (mg/s)
	mass flux in river at SW-005	M r5 =	38.6201 (mg/s)
	mass flux in river at USGS Gage	M r6 =	40.7426 (mg/s)
mass flux into Colby Lake	M cl =	53.0055 (mg/s)	
Average Flow			
Convert mass flux to concentration	concentration in river at SW-001	C r1 =	0.01484 (mg/L)
	concentration in river at SW-002	C r2 =	0.01576 (mg/L)
	concentration in river at SW-003	C r3 =	0.01588 (mg/L)
	concentration in river at SW-004	C r4 =	0.01606 (mg/L)
	concentration in river at SW-004A	C r4A =	0.01636 (mg/L)
	concentration in river at SW-005	C r5 =	0.01651 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.01655 (mg/L)
concentration in Colby Lake	C cl =	0.01670 (mg/L)	

## FLOWS

Case Flow	Year 5 High Flow Conditions (10-yr, 24-hr rainfall event)		
Total flow in Partridge River	flow in river at SW-001	Q_r1_H =	85.35 (cfs)
	flow in river at SW-002	Q_r2_H =	173.06 (cfs)
	flow in river at SW-003	Q_r3_H =	229.43 (cfs)
	flow in river at SW-004	Q_r4_H =	286.99 (cfs)
	flow in river at SW-004A	Q_r4a_H =	929.29 (cfs)
	flow in river at SW-005	Q_r5_H =	1,090.72 (cfs)
	flow in river at USGS Gage	Q_r6_H =	1,091.84 (cfs)
	total flow into Colby Lake	Q_cl_H =	1,429.37 (cfs)
	flow check	Q_ck_H =	1,429.37 (cfs)
Input flow data	surface water flow into SW-001	Q_s1_H =	84.17 (cfs)
	surface water flow into SW-002	Q_s2_H =	87.38 (cfs)
	surface water flow into SW-003	Q_s3_H =	56.26 (cfs)
	surface water flow into SW-004	Q_s4_H =	57.15 (cfs)
	surface water flow into SW-004A	Q_s4a_H =	640.65 (cfs)
	surface water flow into SW-005	Q_s5_H =	159.17 (cfs)
	surface water flow into USGS Gage	Q_s6_H =	0.65 (cfs)
	surface water flow into Colby Lake	Q_scl_H =	335.97 (cfs)
	surface water inflow from Hoyt Lakes WWTP	Q_shl_H =	0.39 (cfs)
	surface water inflow from discharges upstream of PM-1	Q_sns_H =	1.00 (cfs)
	surface water flow from West Pit overflow	Q_sms_H =	- (cfs)
	ground water flow into SW-001	Q_g1_H =	0.18 (cfs)
	ground water flow into SW-002	Q_g2_H =	0.34 (cfs)
	ground water flow into SW-003	Q_g3_H =	0.11 (cfs)
	ground water flow into SW-004	Q_g4_H =	0.32 (cfs)
	ground water flow into SW-004A	Q_g4a_H =	1.39 (cfs)
	ground water flow into SW-005	Q_g5_H =	2.27 (cfs)
	ground water flow into USGS Gage	Q_g6_H =	0.47 (cfs)
	ground water flow into Colby Lake	Q_gcl_H =	1.17 (cfs)
	ground water seepage from East Pit to SW-003	Q_gep_003_H =	- (cfs)
	ground water seepage from East Pit to SW-004	Q_gep_004_H =	- (cfs)
	ground water seepage from west pit	Q_gwp_H =	- (cfs)
	ground water liner leakage from Cat 1 stockpile	Q_gC12_H =	0.0025 (cfs)
	ground water liner leakage from Cat 2/3 stockpile to SW-003	Q_gC3_003_H =	0.0002 (cfs)
	ground water liner leakage from Cat 2/3 stockpile to SW-004	Q_gC3_004_H =	- (cfs)
	ground water liner leakage from Cat 3LO stockpile to SW-003	Q_gC3LO_003_H =	0.0001 (cfs)
	ground water liner leakage from Cat 3LO stockpile to SW-004	Q_gC3LO_004_H =	0.0001 (cfs)
	ground water liner leakage from Cat 4 stockpile	Q_gC4_H =	0.0002 (cfs)
	ground water liner leakage from LOSP	Q_gC4LO_H =	0.0002 (cfs)
	ground water seepage from Overburden Storage	Q_gOS_H =	0.0765 (cfs)
	ground water seepage from Overburden (Cat 1)	Q_gO12_H =	0.2160 (cfs)
	ground water liner leakage from Cat 1 sumps	Q_gC12s_H =	0.0000 (cfs)
	ground water liner leakage from Cat 2/3 sumps	Q_gC3s_H =	0.0000 (cfs)
	ground water liner leakage from Cat 3LO sumps	Q_gC3LOs_H =	0.0000 (cfs)
	ground water liner leakage from Cat 4 sumps	Q_gC4s_H =	0.0000 (cfs)
	ground water liner leakage from LOSP sumps	Q_gC4LOs_H =	0.0000 (cfs)
	ground water seepage from Overburden pond - PW1	Q_gOp1_H =	0.0189 (cfs)
	ground water seepage from Overburden pond - PW7	Q_gOp7_H =	0.0355 (cfs)
	ground water leakage from Haul Road pond - PW2	Q_gHRp2_H =	0.0000 (cfs)
	ground water leakage from Haul Road pond - PW4	Q_gHRp4_H =	0.0000 (cfs)
	ground water leakage from RTH pond - PW3	Q_gRTHp_H =	0.0000 (cfs)
	ground water liner leakage from WWTF pond	Q_gWTFp_H =	0.000004 (cfs)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 5 Silver		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0001 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0001 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0001 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0001 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0001 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0001 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0001 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0001 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0001 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0001 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0006 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0006 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0006 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0006 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0006 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0006 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0006 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0006 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from west pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.0007 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.0007 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0007 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0007 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.0007 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	- (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.0007 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.0007 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.0007 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0007 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0007 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	- (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	- (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0006 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0006 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0006 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0008 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	0.23820 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.00280 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.00340 (mg/s)
	mass flux of surface water into SW-002	M s2 =	0.24728 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.00525 (mg/s)
	mass flux of surface water into SW-003	M s3 =	0.15922 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.00166 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	0.16173 (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.00491 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from west pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	- (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)	
mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)	
mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	- (mg/s)	
mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00000 (mg/s)	
mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00000 (mg/s)	
mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)	
mass flux of liner leakage from WWTF pond	M gWTFp =	0.00000 (mg/s)	
mass flux of surface water into SW-004A	M s4A =	1.81305 (mg/s)	
mass flux of ground water into SW-004A	M g4A =	0.02160 (mg/s)	
mass flux of West Pit overflow	M sms =	#N/A (mg/s)	
mass flux of liner leakage from Cat 1 stockpile	M gC12 =	0.00005 (mg/s)	
mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00000 (mg/s)	
mass flux of seepage from Overburden (Cat 1)	M gO12 =	- (mg/s)	
mass flux of seepage from Overburden Pond - PW7	M gOp7 =	- (mg/s)	
mass flux of surface water into SW-005	M s5 =	0.45044 (mg/s)	
mass flux of ground water into SW-005	M g5 =	0.03533 (mg/s)	
mass flux of surface water into USGS Gage	M s6 =	0.00183 (mg/s)	
mass flux of ground water into USGS Gage	M g6 =	0.00732 (mg/s)	
mass flux of surface water into Colby Lake	M scl =	0.95080 (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	0.01821 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.00110 (mg/s)	
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M r1 =	0.2444 (mg/s)
	mass flux in river at SW-002	M r2 =	0.4969 (mg/s)
	mass flux in river at SW-003	M r3 =	0.6578 (mg/s)
	mass flux in river at SW-004	M r4 =	0.8245 (mg/s)
	mass flux in river at SW-004A	M r4A =	2.6591 (mg/s)
	mass flux in river at SW-005	M r5 =	3.1449 (mg/s)
	mass flux in river at USGS Gage	M r6 =	3.1541 (mg/s)
	mass flux into Colby Lake	M cl =	4.1242 (mg/s)
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C r1 =	0.00010 (mg/L)
	concentration in river at SW-002	C r2 =	0.00010 (mg/L)
	concentration in river at SW-003	C r3 =	0.00010 (mg/L)
	concentration in river at SW-004	C r4 =	0.00010 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00010 (mg/L)
	concentration in river at SW-005	C r5 =	0.00010 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00010 (mg/L)
	concentration in Colby Lake (H)	C cl =	0.00011 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case	Year 5		
Parameter	Aluminum		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0700 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0700 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0700 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0700 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0700 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0700 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0700 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0700 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0700 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0173 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.1250 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.1250 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.1250 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.1250 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.1250 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.1250 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.1250 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.1250 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from west pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	1.6800 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	1.6800 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	1.6800 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	1.6800 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	26.2559 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.4106 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.1400 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	1.6800 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	1.6800 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	1.6800 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	1.6800 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	26.2559 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.4106 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	0.4106 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.1250 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.1250 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.1250 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	5.5520 (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M_s1 =	166.74077 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.63675 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.48959 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	173.09461 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	1.19246 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	111.45228 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.37642 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00877 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00597 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	113.21100 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	1.11611 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from west pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00597 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00749 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.15965 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.88859 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00003 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.21972 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00005 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00010 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00067 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	1.269.13280 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	4.90844 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.12089 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00004 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.85594 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	0.41280 (mg/s)
	mass flux of surface water into SW-005	M_s5 =	315.30607 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	8.03013 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	1.28156 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	1.66263 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	665.55657 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	4.13888 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.77259 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	167.8671 (mg/s)
	mass flux in river at SW-002	M_r2 =	342.1542 (mg/s)
	mass flux in river at SW-003	M_r3 =	453.9976 (mg/s)
	mass flux in river at SW-004	M_r4 =	569.8070 (mg/s)
	mass flux in river at SW-004A	M_r4A =	1.845.0379 (mg/s)
	mass flux in river at SW-005	M_r5 =	2.168.3741 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	2.171.3183 (mg/s)
	mass flux into Colby Lake	M_cl =	2.841.7863 (mg/s)
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C_r1 =	0.06950 (mg/L)
	concentration in river at SW-002	C_r2 =	0.06986 (mg/L)
	concentration in river at SW-003	C_r3 =	0.06992 (mg/L)
	concentration in river at SW-004	C_r4 =	0.07013 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.07016 (mg/L)
	concentration in river at SW-005	C_r5 =	0.07025 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.07027 (mg/L)
	concentration in Colby Lake (H	C_cl =	0.07167 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case	Year 5		
Parameter	Arsenic		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0021 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0021 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0021 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0021 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0021 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0021 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0021 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0021 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0021 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0065 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0022 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0022 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0022 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0022 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0022 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0022 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0022 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0022 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from west pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0459 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.7100 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.7100 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.6255 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0262 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0016 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.0027 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0459 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.7100 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.7100 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.6255 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0262 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0016 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	0.0016 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0022 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0022 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0022 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.1618 (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M_s1 =	5.02604 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.01100 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.18395 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	5.21757 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.02061 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	3.35949 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00650 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00371 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00252 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	3.41250 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.01929 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from west pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00252 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00279 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00016 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00338 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00083 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00002 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	38.25529 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.08482 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.00330 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.01651 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	0.00157 (mg/s)
	mass flux of surface water into SW-005	M_s5 =	9.50423 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.13876 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.03863 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.02873 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	20.06178 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.07152 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.02329 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	5.2210 (mg/s)
	mass flux in river at SW-002	M_r2 =	10.4592 (mg/s)
	mass flux in river at SW-003	M_r3 =	13.8314 (mg/s)
	mass flux in river at SW-004	M_r4 =	17.2729 (mg/s)
	mass flux in river at SW-004A	M_r4A =	55.6344 (mg/s)
	mass flux in river at SW-005	M_r5 =	65.2774 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	65.3447 (mg/s)
	mass flux into Colby Lake	M_cl =	85.5013 (mg/s)
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C_r1 =	0.00216 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00214 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00213 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00213 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00212 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00211 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00211 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.00213 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case		Year 5	
Parameter		Boron	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0450 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0450 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0450 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0450 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0450 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0450 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0450 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0450 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0450 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0960 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0870 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0870 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0870 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0870 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0870 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0870 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0870 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0870 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from west pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.1719 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.7600 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.7600 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.7600 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.7600 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0622 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.0370 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.1719 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.7600 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.7600 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.7600 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.7600 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0622 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	0.0622 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0870 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0870 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0870 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.3282 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	107.19050 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.44318 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	2.71680 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	111.27510 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.82995 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	71.64790 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.26199 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00397 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00270 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	72.77850 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.77681 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from west pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00270 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00339 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00462 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.13461 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.03328 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00003 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00007 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00004 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	815.87108 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	3.41627 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.01237 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.22621 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	0.06253 (mg/s)
	mass flux of surface water into SW-005	M_s5 =	202.69676 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	5.58897 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.82386 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	1.15719 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	427.85780 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	2.88066 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.49667 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	110.3505 (mg/s)
	mass flux in river at SW-002	M_r2 =	222.4555 (mg/s)
	mass flux in river at SW-003	M_r3 =	294.3721 (mg/s)
	mass flux in river at SW-004	M_r4 =	368.1061 (mg/s)
	mass flux in river at SW-004A	M_r4A =	1,187.6946 (mg/s)
	mass flux in river at SW-005	M_r5 =	1,395.9803 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	1,397.9614 (mg/s)
	mass flux into Colby Lake	M_cl =	1,829.1965 (mg/s)
	High Flow		
	concentration in river at SW-001	C_r1 =	0.04569 (mg/L)
	concentration in river at SW-002	C_r2 =	0.04542 (mg/L)
	concentration in river at SW-003	C_r3 =	0.04534 (mg/L)
	concentration in river at SW-004	C_r4 =	0.04532 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.04516 (mg/L)
	concentration in river at SW-005	C_r5 =	0.04523 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.04524 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.04650 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 5 Barium		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0077 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0077 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0077 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0077 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0077 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0077 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0077 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0077 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0077 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0050 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0219 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0219 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0219 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0219 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0219 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0219 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0219 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0219 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from west pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.1900 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.1900 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.1900 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.1900 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.1900 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0168 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.0140 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.1900 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.1900 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.1900 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.1900 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.1900 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0168 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	0.0168 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0219 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0219 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0219 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0969 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	18.29384 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.11166 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.14150 (mg/s)
	mass flux of surface water into SW-002	M s2 =	18.99095 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.20911 (mg/s)
	mass flux of surface water into SW-003	M s3 =	12.22791 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.06601 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.00099 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00068 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	12.42086 (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.19572 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from west pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00068 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00085 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00116 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.03643 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.00901 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00001 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00002 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00001 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	139.24200 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.86074 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	0.01367 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	0.08559 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	0.01692 (mg/s)
	mass flux of surface water into SW-005	M s5 =	34.59358 (mg/s)
	mass flux of ground water into SW-005	M g5 =	1.40816 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	0.14061 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.29156 (mg/s)
mass flux of surface water into Colby Lake	M scl =	73.02106 (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	0.72579 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.08476 (mg/s)	
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M r1 =	18.5470 (mg/s)
	mass flux in river at SW-002	M r2 =	37.7471 (mg/s)
	mass flux in river at SW-003	M r3 =	50.0426 (mg/s)
	mass flux in river at SW-004	M r4 =	62.7074 (mg/s)
	mass flux in river at SW-004A	M r4A =	202.9263 (mg/s)
	mass flux in river at SW-005	M r5 =	238.9281 (mg/s)
	mass flux in river at USGS Gage	M r6 =	239.3602 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M cl =	313.1918 (mg/s)
	High Flow		
	concentration in river at SW-001	C r1 =	0.00768 (mg/L)
	concentration in river at SW-002	C r2 =	0.00771 (mg/L)
	concentration in river at SW-003	C r3 =	0.00771 (mg/L)
	concentration in river at SW-004	C r4 =	0.00772 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00772 (mg/L)
	concentration in river at SW-005	C r5 =	0.00774 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00775 (mg/L)
	concentration in Colby Lake (H)	C cl =	0.00810 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case		Year 5	
Parameter		Beryllium	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0001 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0001 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0001 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0001 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0001 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0001 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0001 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0001 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0001 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0001 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0001 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0001 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0001 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0001 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0001 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0001 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0001 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0001 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from west pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0002 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0002 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0023 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	- (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0002 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0002 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0023 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	- (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	- (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0001 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0001 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0001 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0004 (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M_s1 =	0.23820 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00074 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.00283 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	0.24728 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.00138 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.15922 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00044 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.16173 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.00129 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from west pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	- (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00000 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	1.81305 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.00569 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	- (mg/s)
	mass flux of surface water into SW-005	M_s5 =	0.45044 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.00931 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.00183 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.00193 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	0.95080 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.00480 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00110 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	0.2418 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.4904 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.6501 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.8131 (mg/s)
	mass flux in river at SW-004A	M_r4A =	2.6319 (mg/s)
	mass flux in river at SW-005	M_r5 =	3.0916 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	3.0954 (mg/s)
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C_r1 =	0.00010 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00010 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00010 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00010 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00010 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00010 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00010 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.00010 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 5 Calcium		
Input concentration data	concentration of surface water into SW-001	C s1 =	17.0000 (mg/L)
	concentration of surface water into SW-002	C s2 =	17.0000 (mg/L)
	concentration of surface water into SW-003	C s3 =	17.0000 (mg/L)
	concentration of surface water into SW-004	C s4 =	17.0000 (mg/L)
	concentration of surface water into SW-004A	C s4A =	17.0000 (mg/L)
	concentration of surface water into SW-005	C s5 =	17.0000 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	17.0000 (mg/L)
	concentration of surface water into Colby Lake	C scl =	17.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	17.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	24.5000 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	14.7900 (mg/L)
	concentration of ground water into SW-002	C g2 =	14.7900 (mg/L)
	concentration of ground water into SW-003	C g3 =	14.7900 (mg/L)
	concentration of ground water into SW-004	C g4 =	14.7900 (mg/L)
	concentration of ground water into SW-004A	C g4A =	14.7900 (mg/L)
	concentration of ground water into SW-005	C g5 =	14.7900 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	14.7900 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	14.7900 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from west pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	238.2129 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	540.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	540.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	540.0000 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	119.7340 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	9.3700 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	15.8000 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	238.2129 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	540.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	540.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	540.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	119.7340 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	9.3700 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	9.3700 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	14.7900 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	14.7900 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	14.7900 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	235.9438 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	40,494.18700 (mg/s)
	mass flux of ground water into SW-001	M g1 =	75.34026 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	693.35000 (mg/s)
	mass flux of surface water into SW-002	M s2 =	42,037.26142 (mg/s)
	mass flux of ground water into SW-002	M g2 =	141.09146 (mg/s)
	mass flux of surface water into SW-003	M s3 =	27,066.98280 (mg/s)
	mass flux of ground water into SW-003	M g3 =	44.53811 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	2.82010 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	1.91980 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00044 (mg/s)
	mass flux of surface water into SW-004	M s4 =	27,494.10103 (mg/s)
	mass flux of ground water into SW-004	M g4 =	132.05814 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from west pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	1.91980 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	2.40829 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.72804 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	20.27794 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00042 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00038 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00016 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	5.01400 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00563 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.01206 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.02842 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	308,217.96534 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	580.76605 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	17.14077 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00522 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	96.59856 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	9.42024 (mg/s)
	mass flux of surface water into SW-005	M s5 =	76,574.33105 (mg/s)
	mass flux of ground water into SW-005	M g5 =	950.12439 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	311.23615 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	196.72179 (mg/s)
mass flux of surface water into Colby Lake	M scl =	161,635.16700 (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	489.71169 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	187.62900 (mg/s)	
Mass balance at each node			High Flow
	mass flux in river at SW-001	M r1 =	41,262.8773 (mg/s)
	mass flux in river at SW-002	M r2 =	83,441.2301 (mg/s)
	mass flux in river at SW-003	M r3 =	110,557.4914 (mg/s)
	mass flux in river at SW-004	M r4 =	138,214.0461 (mg/s)
	mass flux in river at SW-004A	M r4A =	447,135.9423 (mg/s)
	mass flux in river at SW-005	M r5 =	524,660.3977 (mg/s)
	mass flux in river at USGS Gage	M r6 =	525,168.3557 (mg/s)
mass flux into Colby Lake	M cl =	687,480.8634 (mg/s)	
Convert mass flux to concentration			High Flow
	concentration in river at SW-001	C r1 =	17.08321 (mg/L)
	concentration in river at SW-002	C r2 =	17.03673 (mg/L)
	concentration in river at SW-003	C r3 =	17.02739 (mg/L)
	concentration in river at SW-004	C r4 =	17.01753 (mg/L)
	concentration in river at SW-004A	C r4A =	17.00215 (mg/L)
	concentration in river at SW-005	C r5 =	16.99723 (mg/L)
	concentration in river at USGS Gage	C r6 =	16.99628 (mg/L)
concentration in Colby Lake (H	C cl =	16.96919 (mg/L)	



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case		Year 5	
Parameter		Cadmium	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0001 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0001 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0001 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0001 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0001 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0001 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0001 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0001 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0001 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0001 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0001 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0001 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0001 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0001 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0001 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0001 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0001 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0001 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from west pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0002 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0002 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0149 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0001 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0002 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0002 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0149 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0001 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	0.0001 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0001 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0001 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0001 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0014 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	0.23820 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00051 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.00283 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	0.24728 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.00095 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.15922 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00030 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.16173 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.00089 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from west pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00009 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00013 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00003 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00000 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	1.81305 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.00393 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	0.00006 (mg/s)
	mass flux of surface water into SW-005	M_s5 =	0.45044 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.00642 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.00183 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.00133 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	0.95080 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.00331 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00110 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	0.2415 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.4896 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.6493 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.8122 (mg/s)
	mass flux in river at SW-004A	M_r4A =	2.6292 (mg/s)
	mass flux in river at SW-005	M_r5 =	3.0861 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	3.0892 (mg/s)
	mass flux into Colby Lake	M_cl =	4.0445 (mg/s)
	High Flow		
	concentration in river at SW-001	C_r1 =	0.00010 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00010 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00010 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00010 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00010 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00010 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00010 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.00010 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 5 Chloride		
Input concentration data	concentration of surface water into SW-001	C s1 =	8.0000 (mg/L)
	concentration of surface water into SW-002	C s2 =	8.0000 (mg/L)
	concentration of surface water into SW-003	C s3 =	8.0000 (mg/L)
	concentration of surface water into SW-004	C s4 =	8.0000 (mg/L)
	concentration of surface water into SW-004A	C s4A =	8.0000 (mg/L)
	concentration of surface water into SW-005	C s5 =	8.0000 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	8.0000 (mg/L)
	concentration of surface water into Colby Lake	C scl =	8.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	8.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	1.6000 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	6.6000 (mg/L)
	concentration of ground water into SW-002	C g2 =	6.6000 (mg/L)
	concentration of ground water into SW-003	C g3 =	6.6000 (mg/L)
	concentration of ground water into SW-004	C g4 =	6.6000 (mg/L)
	concentration of ground water into SW-004A	C g4A =	6.6000 (mg/L)
	concentration of ground water into SW-005	C g5 =	6.6000 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	6.6000 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	6.6000 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from west pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	41.6446 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	33.2365 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	28.8304 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	6.3572 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.3576 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	5.3500 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	2.3300 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	41.6446 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	33.2365 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	28.8304 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	6.3572 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.3576 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	5.3500 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	5.3500 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	6.6000 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	6.6000 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	6.6000 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	32.8400 (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M s1 =	19,056.08800 (mg/s)
	mass flux of ground water into SW-001	M g1 =	33.62040 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	45.28000 (mg/s)
	mass flux of surface water into SW-002	M s2 =	19,782.24067 (mg/s)
	mass flux of ground water into SW-002	M g2 =	62.96171 (mg/s)
	mass flux of surface water into SW-003	M s3 =	12,737.40367 (mg/s)
	mass flux of ground water into SW-003	M g3 =	19.87502 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.17357 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.10250 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00003 (mg/s)
	mass flux of surface water into SW-004	M s4 =	12,938.40048 (mg/s)
	mass flux of ground water into SW-004	M g4 =	58.93061 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from west pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.10250 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.02835 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00217 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	11.57812 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00002 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	2.86285 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00251 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00538 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00396 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	145,043.74839 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	259.16538 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	2.99657 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00091 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	14.24523 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	5.37868 (mg/s)
	mass flux of surface water into SW-005	M s5 =	36,034.97932 (mg/s)
	mass flux of ground water into SW-005	M g5 =	423.99060 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	146.46407 (mg/s)
mass flux of ground water into USGS Gage	M g6 =	87.78660 (mg/s)	
mass flux of surface water into Colby Lake	M scl =	76,063.60800 (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	218.53260 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	88.29600 (mg/s)	
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M r1 =	19,134.9884 (mg/s)
	mass flux in river at SW-002	M r2 =	38,980.1908 (mg/s)
	mass flux in river at SW-003	M r3 =	51,737.7456 (mg/s)
	mass flux in river at SW-004	M r4 =	64,749.6626 (mg/s)
	mass flux in river at SW-004A	M r4A =	210,075.1977 (mg/s)
	mass flux in river at SW-005	M r5 =	246,534.1676 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M r6 =	246,768.4183 (mg/s)
	mass flux into Colby Lake	M cl =	323,138.8549 (mg/s)
	High Flow		
	concentration in river at SW-001	C r1 =	7.92206 (mg/L)
	concentration in river at SW-002	C r2 =	7.95884 (mg/L)
	concentration in river at SW-003	C r3 =	7.96833 (mg/L)
	concentration in river at SW-004	C r4 =	7.97227 (mg/L)
	concentration in river at SW-004A	C r4A =	7.98802 (mg/L)
	concentration in river at SW-005	C r5 =	7.98688 (mg/L)
	concentration in river at USGS Gage	C r6 =	7.98629 (mg/L)
	concentration in Colby Lake (H)	C cl =	7.92479 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case		Year 5	
Parameter		Cobalt	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0005 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0005 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0005 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0005 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0005 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0005 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0005 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0005 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0005 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0005 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0017 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0017 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0017 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0017 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0017 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0017 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0017 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0017 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from west pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0070 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0520 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0520 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0520 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	1.4454 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0011 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.0013 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0070 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0520 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0520 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0520 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	1.4454 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0011 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	0.0011 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0017 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0017 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0017 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	0.2860 (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M_s1 =	1.19101 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00841 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.01415 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	1.23639 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.01574 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.79609 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00497 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00027 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00018 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.80865 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.01473 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from west pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00018 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00023 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00879 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00240 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00059 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00003 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	9.06523 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.06479 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.00050 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.00795 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	0.00112 (mg/s)
	mass flux of surface water into SW-005	M_s5 =	2.25219 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.10600 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.00915 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.02195 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	4.75398 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.05463 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00552 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	1.2136 (mg/s)
	mass flux in river at SW-002	M_r2 =	2.4657 (mg/s)
	mass flux in river at SW-003	M_r3 =	3.2672 (mg/s)
	mass flux in river at SW-004	M_r4 =	4.1028 (mg/s)
	mass flux in river at SW-004A	M_r4A =	13.2424 (mg/s)
	mass flux in river at SW-005	M_r5 =	15.6006 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	15.6317 (mg/s)
	mass flux into Colby Lake	M_cl =	20.4458 (mg/s)
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C_r1 =	0.00050 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00050 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00050 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00051 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00050 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00051 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00051 (mg/L)
	concentration in Colby Lake (H	C_cl =	0.00054 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 5 Copper		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0017 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0017 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0017 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0017 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0017 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0017 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0017 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0017 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0190 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0012 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0030 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0030 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0030 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0030 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0030 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0030 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0030 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0030 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from west pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0920 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0920 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0920 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0920 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.3481 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0214 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.0170 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0920 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0920 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0920 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0920 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.3481 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0214 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	0.0214 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0030 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0030 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0030 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.1092 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	4.04942 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.01503 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.03509 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	4.20373 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.02814 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	2.70670 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00888 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00048 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00033 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	2.74941 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.02634 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from west pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00033 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00041 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00212 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.04640 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.01147 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00001 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	30.82180 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.11584 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.00662 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.10394 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	0.02155 (mg/s)
	mass flux of surface water into SW-005	M_s5 =	7.65743 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.18951 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.03112 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.03924 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	16.16352 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.09768 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.20970 (mg/s)
Mass balance at each node	mass flux in river at SW-001	M_r1 =	4.0995 (mg/s)
	mass flux in river at SW-002	M_r2 =	8.3314 (mg/s)
	mass flux in river at SW-003	M_r3 =	11.0478 (mg/s)
	mass flux in river at SW-004	M_r4 =	13.8843 (mg/s)
	mass flux in river at SW-004A	M_r4A =	44.9540 (mg/s)
	mass flux in river at SW-005	M_r5 =	52.8010 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	52.8713 (mg/s)
	mass flux into Colby Lake	M_cl =	69.3422 (mg/s)
Convert mass flux to concentration	concentration in river at SW-001	C_r1 =	0.00170 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00170 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00170 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00171 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00171 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00171 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00171 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.00179 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 5 Fluoride		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0700 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0700 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0700 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0700 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0700 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0700 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0700 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0700 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0700 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.1400 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.2800 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.2800 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.2800 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.2800 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.2800 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.2800 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.2800 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.2800 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from west pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.0626 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.0621 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0621 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0621 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.0628 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.2239 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.4200 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.0626 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.0621 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.0621 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0621 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0628 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.2239 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	0.2239 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.2800 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.2800 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.2800 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.1706 (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M s1 =	166.74077 (mg/s)
	mass flux of ground water into SW-001	M g1 =	1.42632 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	3.96200 (mg/s)
	mass flux of surface water into SW-002	M s2 =	173.09461 (mg/s)
	mass flux of ground water into SW-002	M g2 =	2.67110 (mg/s)
	mass flux of surface water into SW-003	M s3 =	111.45228 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.84318 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.00032 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00022 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	113.21100 (mg/s)
	mass flux of ground water into SW-004	M g4 =	2.50009 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from west pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00022 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00028 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00038 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.48453 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.11981 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00011 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00023 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00002 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	1,269.13280 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	10.99489 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	0.00451 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	2.56781 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	0.22509 (mg/s)
	mass flux of surface water into SW-005	M s5 =	315.30607 (mg/s)
	mass flux of ground water into SW-005	M g5 =	17.98748 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	1.28156 (mg/s)
mass flux of ground water into USGS Gage	M g6 =	3.72428 (mg/s)	
mass flux of surface water into Colby Lake	M scl =	665.55657 (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	9.27108 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.77259 (mg/s)	
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M r1 =	172.1291 (mg/s)
	mass flux in river at SW-002	M r2 =	347.8948 (mg/s)
	mass flux in river at SW-003	M r3 =	460.1908 (mg/s)
	mass flux in river at SW-004	M r4 =	576.5075 (mg/s)
	mass flux in river at SW-004A	M r4A =	1,859.4326 (mg/s)
	mass flux in river at SW-005	M r5 =	2,192.7261 (mg/s)
	mass flux in river at USGS Gage	M r6 =	2,197.7320 (mg/s)
mass flux into Colby Lake	M cl =	2,873.3322 (mg/s)	
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C r1 =	0.07126 (mg/L)
	concentration in river at SW-002	C r2 =	0.07103 (mg/L)
	concentration in river at SW-003	C r3 =	0.07088 (mg/L)
	concentration in river at SW-004	C r4 =	0.07098 (mg/L)
	concentration in river at SW-004A	C r4A =	0.07070 (mg/L)
	concentration in river at SW-005	C r5 =	0.07104 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.07113 (mg/L)
	concentration in Colby Lake (H)	C cl =	0.07678 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case		Year 5	
Parameter		Iron	
Input concentration data	concentration of surface water into SW-001	C_s1 =	1.6000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	1.6000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	1.6000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	1.6000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	1.6000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	1.6000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	1.6000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	1.6000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	1.6000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0300 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	2.8440 (mg/L)
	concentration of ground water into SW-002	C_g2 =	2.8440 (mg/L)
	concentration of ground water into SW-003	C_g3 =	2.8440 (mg/L)
	concentration of ground water into SW-004	C_g4 =	2.8440 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	2.8440 (mg/L)
	concentration of ground water into SW-005	C_g5 =	2.8440 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	2.8440 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	2.8440 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from west pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.8100 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.8100 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.8100 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.8100 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	235.0000 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.2255 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.1500 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.8100 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.8100 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.8100 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.8100 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	235.0000 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.2255 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	0.2255 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	2.8440 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	2.8440 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	2.8440 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	18.6742 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	3,811.21760 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	14.48734 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.84900 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	3,956.44813 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	27.13077 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	2,547.48073 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	8.56433 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00423 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00288 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	2,587.68010 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	25.39374 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from west pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00288 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00361 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	1.42891 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.48801 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00031 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.12067 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00108 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00232 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00225 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	29,008.74968 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	111.67672 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.05828 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00002 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.91707 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	0.22671 (mg/s)
	mass flux of surface water into SW-005	M_s5 =	7,206.99586 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	182.70140 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	29.29281 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	37.82804 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	15,212.72160 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	94.16768 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	17.65920 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	3,826.5539 (mg/s)
	mass flux in river at SW-002	M_r2 =	7,810.1328 (mg/s)
	mass flux in river at SW-003	M_r3 =	10,366.1850 (mg/s)
	mass flux in river at SW-004	M_r4 =	12,981.3069 (mg/s)
	mass flux in river at SW-004A	M_r4A =	42,102.3374 (mg/s)
	mass flux in river at SW-005	M_r5 =	49,492.6346 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	49,559.7555 (mg/s)
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C_r1 =	1.58423 (mg/L)
	concentration in river at SW-002	C_r2 =	1.59465 (mg/L)
	concentration in river at SW-003	C_r3 =	1.59654 (mg/L)
	concentration in river at SW-004	C_r4 =	1.59832 (mg/L)
	concentration in river at SW-004A	C_r4A =	1.60095 (mg/L)
	concentration in river at SW-005	C_r5 =	1.60339 (mg/L)
	concentration in river at USGS Gage	C_r6 =	1.60393 (mg/L)
	concentration in Colby Lake (H)	C_cl =	1.62830 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case	Year 5		
Parameter	Hardness		
Input concentration data	concentration of surface water into SW-001	C_s1 =	110.0000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	110.0000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	110.0000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	110.0000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	110.0000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	110.0000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	110.0000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	110.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	110.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	110.0000 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	66.4200 (mg/L)
	concentration of ground water into SW-002	C_g2 =	66.4200 (mg/L)
	concentration of ground water into SW-003	C_g3 =	66.4200 (mg/L)
	concentration of ground water into SW-004	C_g4 =	66.4200 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	66.4200 (mg/L)
	concentration of ground water into SW-005	C_g5 =	66.4200 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	66.4200 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	66.4200 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from west pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	776.4904 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	1,729.3495 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	1,729.3495 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	1,729.3495 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	1,039.8658 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	43.5200 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	71.5000 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	776.4904 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	1,729.3495 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	1,729.3495 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	1,729.3495 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	1,039.8658 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	43.5200 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	43.5200 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	66.4200 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	66.4200 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	66.4200 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	886.8372 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	262,021.21000 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	338.34348 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	3,113.00000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	272,005.80921 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	633.62374 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	175,139.30046 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	200.01496 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	9,03136 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	6.14815 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00139 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	177,903.00666 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	593.05624 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from west pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	6.14815 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	7.71253 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	6.32286 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	94.18314 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00133 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00121 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00139 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	23.28806 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.02527 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.05414 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00002 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.10682 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	##### (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	2,608.14612 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	55.87290 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.01702 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	437.13905 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	43.75333 (mg/s)
	mass flux of surface water into SW-005	M_s5 =	495,480.96560 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	4,266.88722 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	2,013.88098 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	883.45242 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	##### (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	2,199.23262 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	1,214.07000 (mg/s)
Mass balance at each node	mass flux in river at SW-001	M_r1 =	265,472.5535 (mg/s)
	mass flux in river at SW-002	M_r2 =	538,111.9864 (mg/s)
	mass flux in river at SW-003	M_r3 =	713,466.4828 (mg/s)
	mass flux in river at SW-004	M_r4 =	892,100.3920 (mg/s)
	mass flux in river at SW-004A	M_r4A =	2,889,596.8608 (mg/s)
	mass flux in river at SW-005	M_r5 =	3,389,344.7136 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	3,392,242.0470 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	4,441,529.9597 (mg/s)
	concentration in river at SW-001	C_r1 =	109.90809 (mg/L)
	concentration in river at SW-002	C_r2 =	109.86979 (mg/L)
	concentration in river at SW-003	C_r3 =	109.88376 (mg/L)
	concentration in river at SW-004	C_r4 =	109.83937 (mg/L)
	concentration in river at SW-004A	C_r4A =	109.87565 (mg/L)
	concentration in river at SW-005	C_r5 =	109.80336 (mg/L)
	concentration in river at USGS Gage	C_r6 =	109.78480 (mg/L)
	concentration in Colby Lake (H	C_cl =	108.66550 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case		Year 5	
Parameter	Potassium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	1.3000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	1.3000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	1.3000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	1.3000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	1.3000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	1.3000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	1.3000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	1.3000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	1.3000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	2.7000 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	1.7500 (mg/L)
	concentration of ground water into SW-002	C_g2 =	1.7500 (mg/L)
	concentration of ground water into SW-003	C_g3 =	1.7500 (mg/L)
	concentration of ground water into SW-004	C_g4 =	1.7500 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	1.7500 (mg/L)
	concentration of ground water into SW-005	C_g5 =	1.7500 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	1.7500 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	1.7500 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from west pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	49.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	49.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	49.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	49.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	38.0000 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	2.2600 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	4.4500 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	49.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	49.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	49.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	49.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	38.0000 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	2.2600 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	2.2600 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	1.7500 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	1.7500 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	1.7500 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	22.2394 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	3,096.61430 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	8.91450 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	76.41000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	3,214.61411 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	16.69439 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	2,069.82810 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	5.26989 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.25590 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.17420 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00004 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	2,102.49008 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	15.62554 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from west pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.17420 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.21853 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.23106 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	4.89094 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00004 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00003 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00005 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	1.20935 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00067 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00143 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00268 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	23,569.60911 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	68.71809 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	3.52583 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00107 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	27.20656 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	2.27212 (mg/s)
	mass flux of surface water into SW-005	M_s5 =	5,855.68414 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	112.42175 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	23.80041 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	23.27675 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	12,360.33630 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	57.94425 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	14.34810 (mg/s)
Mass balance at each node	mass flux in river at SW-001	M_r1 =	3,181.9388 (mg/s)
	mass flux in river at SW-002	M_r2 =	6,413.2473 (mg/s)
	mass flux in river at SW-003	M_r3 =	8,488.7754 (mg/s)
	mass flux in river at SW-004	M_r4 =	10,613.6201 (mg/s)
	mass flux in river at SW-004A	M_r4A =	34,284.9529 (mg/s)
	mass flux in river at SW-005	M_r5 =	40,253.0587 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	40,300.1359 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	52,732.7646 (mg/s)
	concentration in river at SW-001	C_r1 =	1.31735 (mg/L)
	concentration in river at SW-002	C_r2 =	1.30943 (mg/L)
	concentration in river at SW-003	C_r3 =	1.30739 (mg/L)
	concentration in river at SW-004	C_r4 =	1.30680 (mg/L)
	concentration in river at SW-004A	C_r4A =	1.30367 (mg/L)
	concentration in river at SW-005	C_r5 =	1.30406 (mg/L)
	concentration in river at USGS Gage	C_r6 =	1.30425 (mg/L)
	concentration in Colby Lake (H)	C_cl =	1.32248 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case		Year 5	
Parameter		Magnesium	
Input concentration data	concentration of surface water into SW-001	C_s1 =	8.0000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	8.0000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	8.0000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	8.0000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	8.0000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	8.0000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	8.0000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	8.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	8.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	10.5000 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	8.0200 (mg/L)
	concentration of ground water into SW-002	C_g2 =	8.0200 (mg/L)
	concentration of ground water into SW-003	C_g3 =	8.0200 (mg/L)
	concentration of ground water into SW-004	C_g4 =	8.0200 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	8.0200 (mg/L)
	concentration of ground water into SW-005	C_g5 =	8.0200 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	8.0200 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	8.0200 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from west pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	44.3337 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	93.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	93.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	93.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	180.1303 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	4.8800 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	9.0100 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	44.3337 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	93.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	93.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	93.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	180.1303 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	4.8800 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	4.8800 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	8.0200 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	8.0200 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	8.0200 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	72.5230 (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M_s1 =	19,056.08800 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	40.85388 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	297.15000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	19,782.24067 (mg/s)
	mass flux of surface water into SW-002	M_g2 =	76.50802 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	12,737.40367 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	24.15116 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.48568 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.33063 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00007 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	12,938.40048 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	71.60962 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from west pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.33063 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.41476 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	1.09527 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	10.56098 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00007 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00007 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00024 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	2.61135 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00305 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00654 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00874 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	145,043.74839 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	314.92520 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	3.19006 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00097 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	55.08563 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	4.90616 (mg/s)
	mass flux of surface water into SW-005	M_s5 =	36,034.97932 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	515.21282 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	146.46407 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	106.67402 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	76,063.60800 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	265.55022 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	88.29600 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	19,394.0919 (mg/s)
	mass flux in river at SW-002	M_r2 =	39,252.8406 (mg/s)
	mass flux in river at SW-003	M_r3 =	52,015.2118 (mg/s)
	mass flux in river at SW-004	M_r4 =	65,040.2537 (mg/s)
	mass flux in river at SW-004A	M_r4A =	210,462.1101 (mg/s)
	mass flux in river at SW-005	M_r5 =	247,012.3022 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	247,265.4403 (mg/s)
	mass flux into Colby Lake	M_cl =	323,682.8945 (mg/s)
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C_r1 =	8.02933 (mg/L)
	concentration in river at SW-002	C_r2 =	8.01451 (mg/L)
	concentration in river at SW-003	C_r3 =	8.01107 (mg/L)
	concentration in river at SW-004	C_r4 =	8.00805 (mg/L)
	concentration in river at SW-004A	C_r4A =	8.00273 (mg/L)
	concentration in river at SW-005	C_r5 =	8.00237 (mg/L)
	concentration in river at USGS Gage	C_r6 =	8.00237 (mg/L)
	concentration in Colby Lake (H)	C_cl =	8.01176 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case		Year 5	
Parameter	Manganese		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.1500 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.1500 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.1500 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.1500 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.1500 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.1500 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.1500 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.1500 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.1500 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0086 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.1240 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.1240 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.1240 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.1240 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.1240 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.1240 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.1240 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.1240 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from west pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.1050 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.7500 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.7500 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.7500 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	3.6994 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.1604 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.1160 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.1050 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.7500 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.7500 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.7500 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	3.6994 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.1604 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	0.1604 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.1240 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.1240 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.1240 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.9101 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	357.30165 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.63166 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.24338 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	370.91701 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	1.18292 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	238.82632 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.37341 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00392 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00267 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	242.59501 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	1.10718 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from west pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00267 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00334 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.02249 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.34711 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.08583 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00005 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00010 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00011 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	2,719.57028 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	4.86917 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.00755 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.70920 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	0.16125 (mg/s)
	mass flux of surface water into SW-005	M_s5 =	675.65586 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	7.96588 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	2.74620 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	1.64932 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	1,426.19265 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	4.10576 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	1.65555 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	358.1767 (mg/s)
	mass flux in river at SW-002	M_r2 =	730.2766 (mg/s)
	mass flux in river at SW-003	M_r3 =	969.4829 (mg/s)
	mass flux in river at SW-004	M_r4 =	1,213.6468 (mg/s)
	mass flux in river at SW-004A	M_r4A =	3,938.9643 (mg/s)
	mass flux in river at SW-005	M_r5 =	4,622.5860 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	4,626.9816 (mg/s)
	mass flux into Colby Lake	M_cl =	6,058.9355 (mg/s)
	High Flow		
	concentration in river at SW-001	C_r1 =	0.14829 (mg/L)
	concentration in river at SW-002	C_r2 =	0.14911 (mg/L)
	concentration in river at SW-003	C_r3 =	0.14931 (mg/L)
	concentration in river at SW-004	C_r4 =	0.14943 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.14978 (mg/L)
	concentration in river at SW-005	C_r5 =	0.14976 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.14975 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.14856 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case	Year 5		
Parameter	Sodium		
Input concentration data	concentration of surface water into SW-001	C s1 =	2.5000 (mg/L)
	concentration of surface water into SW-002	C s2 =	2.5000 (mg/L)
	concentration of surface water into SW-003	C s3 =	2.5000 (mg/L)
	concentration of surface water into SW-004	C s4 =	2.5000 (mg/L)
	concentration of surface water into SW-004A	C s4A =	2.5000 (mg/L)
	concentration of surface water into SW-005	C s5 =	2.5000 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	2.5000 (mg/L)
	concentration of surface water into Colby Lake	C scl =	2.5000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	2.5000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	4.8000 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	13.3300 (mg/L)
	concentration of ground water into SW-002	C g2 =	13.3300 (mg/L)
	concentration of ground water into SW-003	C g3 =	13.3300 (mg/L)
	concentration of ground water into SW-004	C g4 =	13.3300 (mg/L)
	concentration of ground water into SW-004A	C g4A =	13.3300 (mg/L)
	concentration of ground water into SW-005	C g5 =	13.3300 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	13.3300 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	13.3300 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from west pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	71.7057 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	280.9920 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	287.8765 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	163.7852 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	22.6023 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	4.6000 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	7.1900 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	71.7057 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	280.9920 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	287.8765 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	163.7852 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	22.6023 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	4.6000 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	4.6000 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	13.3300 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	13.3300 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	13.3300 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	153.0910 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	5,955.02750 (mg/s)
	mass flux of ground water into SW-001	M g1 =	67.90302 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	135.84000 (mg/s)
	mass flux of surface water into SW-002	M s2 =	6,181.95021 (mg/s)
	mass flux of ground water into SW-002	M g2 =	127.16357 (mg/s)
	mass flux of surface water into SW-003	M s3 =	3,980.43865 (mg/s)
	mass flux of ground water into SW-003	M g3 =	40.14151 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	1.46745 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	1.02345 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00023 (mg/s)
	mass flux of surface water into SW-004	M s4 =	4,043.25015 (mg/s)
	mass flux of ground water into SW-004	M g4 =	119.02198 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from west pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	1.02345 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.73045 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.13743 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	9.95502 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00022 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00011 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00003 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	2.46151 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00507 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.01087 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.01844 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	45,326.17137 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	523.43553 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	5.15963 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00157 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	43.95846 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	4.62466 (mg/s)
	mass flux of surface water into SW-005	M s5 =	11,260.93104 (mg/s)
	mass flux of ground water into SW-005	M g5 =	856.33253 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	45.77002 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	177.30233 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	23,769.87750 (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	441.36963 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl =	27.59250 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M r1 =	6,158.7705 (mg/s)
	mass flux in river at SW-002	M r2 =	12,467.8843 (mg/s)
	mass flux in river at SW-003	M r3 =	16,490.9556 (mg/s)
	mass flux in river at SW-004	M r4 =	20,667.5706 (mg/s)
	mass flux in river at SW-004A	M r4A =	66,570.9218 (mg/s)
	mass flux in river at SW-005	M r5 =	78,688.1854 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M r6 =	78,911.2577 (mg/s)
	mass flux into Colby Lake	M cl =	103,150.0973 (mg/s)
	High Flow		
	concentration in river at SW-001	C r1 =	2.54979 (mg/L)
	concentration in river at SW-002	C r2 =	2.54565 (mg/L)
	concentration in river at SW-003	C r3 =	2.53984 (mg/L)
	concentration in river at SW-004	C r4 =	2.54468 (mg/L)
	concentration in river at SW-004A	C r4A =	2.53133 (mg/L)
	concentration in river at SW-005	C r5 =	2.54923 (mg/L)
	concentration in river at USGS Gage	C r6 =	2.55384 (mg/L)
	concentration in Colby Lake (H)	C cl =	2.83681 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 5 Nickel		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0016 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0016 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0016 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0016 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0016 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0016 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0016 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0016 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0033 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0016 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0163 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0163 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0163 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0163 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0163 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0163 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0163 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0163 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from west pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.0453 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.8600 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.8600 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.8600 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	18.7259 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0080 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.0190 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.0453 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.8600 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.8600 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.8600 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	18.7259 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0080 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	0.0080 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0163 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0163 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0163 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	3.7296 (mg/L)
Convert concentration to mass flux			High Flow
	mass flux of surface water into SW-001	M s1 =	3.71594 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.08293 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.04387 (mg/s)
	mass flux of surface water into SW-002	M s2 =	3.85754 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.15531 (mg/s)
	mass flux of surface water into SW-003	M s3 =	2.48379 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.04903 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.00449 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00306 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	2.52299 (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.14536 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from west pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00306 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00384 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.11386 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.01725 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00002 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.00426 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00001 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00001 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00045 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	28.28353 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.63927 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	0.00326 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	0.11616 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	0.00801 (mg/s)
	mass flux of surface water into SW-005	M s5 =	7.02682 (mg/s)
	mass flux of ground water into SW-005	M g5 =	1.04584 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	0.02856 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.21654 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	14.83240 (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	0.53905 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.03642 (mg/s)
Mass balance at each node			High Flow
	mass flux in river at SW-001	M r1 =	3.8427 (mg/s)
	mass flux in river at SW-002	M r2 =	7.8556 (mg/s)
	mass flux in river at SW-003	M r3 =	10.3959 (mg/s)
	mass flux in river at SW-004	M r4 =	13.2071 (mg/s)
	mass flux in river at SW-004A	M r4A =	42.2573 (mg/s)
	mass flux in river at SW-005	M r5 =	50.3300 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M r6 =	50.5751 (mg/s)
	mass flux into Colby Lake	M cl =	65.9829 (mg/s)
			High Flow
	concentration in river at SW-001	C r1 =	0.00159 (mg/L)
	concentration in river at SW-002	C r2 =	0.00160 (mg/L)
	concentration in river at SW-003	C r3 =	0.00160 (mg/L)
	concentration in river at SW-004	C r4 =	0.00163 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00161 (mg/L)
	concentration in river at SW-005	C r5 =	0.00163 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00164 (mg/L)
	concentration in Colby Lake (H)	C cl =	0.00203 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 5 Lead		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0005 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0005 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0005 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0005 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0005 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0005 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0005 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0005 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0005 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0002 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0011 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0011 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0011 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0011 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0011 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0011 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0011 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0011 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from west pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.0054 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.0103 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0106 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0230 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.0315 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0007 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.0054 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.0103 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.0106 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0230 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0315 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0007 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	0.0007 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0011 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0011 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0011 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	0.0133 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	1.19101 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.00571 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.00425 (mg/s)
	mass flux of surface water into SW-002	M s2 =	1.23639 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.01068 (mg/s)
	mass flux of surface water into SW-003	M s3 =	0.79609 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.00337 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.00005 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00004 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	0.80865 (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.01000 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from west pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00004 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00010 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00019 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.00146 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.00036 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00000 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	9.06523 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.04398 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	0.00039 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	0.00068 (mg/s)
	mass flux of surface water into SW-005	M s5 =	2.25219 (mg/s)
	mass flux of ground water into SW-005	M g5 =	0.07195 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	0.00915 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.01490 (mg/s)
mass flux of surface water into Colby Lake	M scl =	4.75398 (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	0.03708 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.00552 (mg/s)	
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M r1 =	1.2010 (mg/s)
	mass flux in river at SW-002	M r2 =	2.4480 (mg/s)
	mass flux in river at SW-003	M r3 =	3.2476 (mg/s)
	mass flux in river at SW-004	M r4 =	4.0684 (mg/s)
	mass flux in river at SW-004A	M r4A =	13.1787 (mg/s)
	mass flux in river at SW-005	M r5 =	15.5028 (mg/s)
	mass flux in river at USGS Gage	M r6 =	15.5269 (mg/s)
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C r1 =	0.00050 (mg/L)
	concentration in river at SW-002	C r2 =	0.00050 (mg/L)
	concentration in river at SW-003	C r3 =	0.00050 (mg/L)
	concentration in river at SW-004	C r4 =	0.00050 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00050 (mg/L)
	concentration in river at SW-005	C r5 =	0.00050 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00050 (mg/L)
	concentration in Colby Lake (H)	C cl =	0.00052 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 5 Antimony		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0015 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0015 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0015 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0015 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0015 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0015 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0015 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0015 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0015 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0015 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0015 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0015 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0015 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0015 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0015 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0015 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0015 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0015 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from west pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.0800 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.0800 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0800 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0800 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.0109 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0003 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.0004 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.0800 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.0800 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.0800 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0800 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0109 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0003 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	0.0003 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0015 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0015 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0015 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	0.0362 (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M s1 =	3.57302 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.00764 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.04245 (mg/s)
	mass flux of surface water into SW-002	M s2 =	3.70917 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.01431 (mg/s)
	mass flux of surface water into SW-003	M s3 =	2.38826 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.00452 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.00042 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00028 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	2.42595 (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.01339 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from west pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00028 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00036 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00007 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.00065 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.00016 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00000 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	27.19570 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.05890 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	0.00576 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	0.00245 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	0.00030 (mg/s)
	mass flux of surface water into SW-005	M s5 =	6.75656 (mg/s)
	mass flux of ground water into SW-005	M g5 =	0.09636 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	0.02746 (mg/s)
mass flux of ground water into USGS Gage	M g6 =	0.01995 (mg/s)	
mass flux of surface water into Colby Lake	M scl =	14.26193 (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	0.04967 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.01656 (mg/s)	
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M r1 =	3.6231 (mg/s)
	mass flux in river at SW-002	M r2 =	7.3466 (mg/s)
	mass flux in river at SW-003	M r3 =	9.7401 (mg/s)
	mass flux in river at SW-004	M r4 =	12.1809 (mg/s)
	mass flux in river at SW-004A	M r4A =	39.4440 (mg/s)
	mass flux in river at SW-005	M r5 =	46.2970 (mg/s)
	mass flux in river at USGS Gage	M r6 =	46.3444 (mg/s)
	mass flux into Colby Lake	M cl =	60.6725 (mg/s)
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C r1 =	0.00150 (mg/L)
	concentration in river at SW-002	C r2 =	0.00150 (mg/L)
	concentration in river at SW-003	C r3 =	0.00150 (mg/L)
	concentration in river at SW-004	C r4 =	0.00150 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00150 (mg/L)
	concentration in river at SW-005	C r5 =	0.00150 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00150 (mg/L)
	concentration in Colby Lake (H	C cl =	0.00150 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 5 Selenium			
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0005 (mg/L)	
	concentration of surface water into SW-002	C s2 =	0.0005 (mg/L)	
	concentration of surface water into SW-003	C s3 =	0.0005 (mg/L)	
	concentration of surface water into SW-004	C s4 =	0.0005 (mg/L)	
	concentration of surface water into SW-004A	C s4A =	0.0005 (mg/L)	
	concentration of surface water into SW-005	C s5 =	0.0005 (mg/L)	
	concentration of surface water into USGS Gage	C s6 =	0.0005 (mg/L)	
	concentration of surface water into Colby Lake	C scl =	0.0005 (mg/L)	
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0005 (mg/L)	
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0005 (mg/L)	
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)	
	concentration of ground water into SW-001	C g1 =	0.0019 (mg/L)	
	concentration of ground water into SW-002	C g2 =	0.0019 (mg/L)	
	concentration of ground water into SW-003	C g3 =	0.0019 (mg/L)	
	concentration of ground water into SW-004	C g4 =	0.0019 (mg/L)	
	concentration of ground water into SW-004A	C g4A =	0.0019 (mg/L)	
	concentration of ground water into SW-005	C g5 =	0.0019 (mg/L)	
	concentration of ground water into USGS Gage	C g6 =	0.0019 (mg/L)	
	concentration of ground water into Colby Lake	C gcl =	0.0019 (mg/L)	
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)	
	concentration of ground water seepage from west pit	C gwp =	#N/A (mg/L)	
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.0029 (mg/L)	
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.0029 (mg/L)	
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0029 (mg/L)	
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0029 (mg/L)	
	concentration of liner leakage from LOSP	C gC4LO =	0.0029 (mg/L)	
	concentration of seepage from Overburden (Storage)	C gOS =	0.0004 (mg/L)	
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.0019 (mg/L)	
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.0029 (mg/L)	
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.0029 (mg/L)	
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.0029 (mg/L)	
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0029 (mg/L)	
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0029 (mg/L)	
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0004 (mg/L)	
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	0.0004 (mg/L)	
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0019 (mg/L)	
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0019 (mg/L)	
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0019 (mg/L)	
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0024 (mg/L)	
	Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	1.19101 (mg/s)
		mass flux of ground water into SW-001	M g1 =	0.00973 (mg/s)
		mass flux of surface discharges from upstream of PM-1	M sns =	0.01415 (mg/s)
		mass flux of surface water into SW-002	M s2 =	1.23639 (mg/s)
		mass flux of ground water into SW-002	M g2 =	0.01822 (mg/s)
mass flux of surface water into SW-003		M s3 =	0.79609 (mg/s)	
mass flux of ground water into SW-003		M g3 =	0.00575 (mg/s)	
mass flux of seepage from East Pit to SW-003		M gep_003 =	#N/A (mg/s)	
mass flux of liner leakage from Cat 2/3 stockpile to SW-003		M gC3_003 =	0.00002 (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-003		M gC3LO_003 =	0.00001 (mg/s)	
mass flux of liner leakage from Cat 2/3 sumps to SW-003		M gC3s_003 =	0.00000 (mg/s)	
mass flux of surface water into SW-004		M s4 =	0.80865 (mg/s)	
mass flux of ground water into SW-004		M g4 =	0.01705 (mg/s)	
mass flux of seepage from East Pit to SW-004		M gep_004 =	#N/A (mg/s)	
mass flux of seepage from west pit		M gwp =	#N/A (mg/s)	
mass flux of liner leakage from Cat 2/3 stockpile to SW-004		M gC3_004 =	- (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-004		M gC3LO_004 =	0.00001 (mg/s)	
mass flux of liner leakage from Cat 4 stockpile		M gC4 =	0.00001 (mg/s)	
mass flux of liner leakage from LOSP		M gC4LO =	0.00002 (mg/s)	
mass flux of seepage from Overburden (Storage)		M gOS =	0.00096 (mg/s)	
mass flux of liner leakage from Cat 3LO sumps to SW-004		M gC3LOs_004 =	0.00000 (mg/s)	
mass flux of liner leakage from Cat 4 sumps		M gC4s =	0.00000 (mg/s)	
mass flux of liner leakage from LOSP sumps		M gC4LOs =	0.00000 (mg/s)	
mass flux of seepage from Overburden Ponds - PW1		M gOp1 =	0.00024 (mg/s)	
mass flux of leakage from Haul Road Pond - PW2		M gHRp2 =	0.00000 (mg/s)	
mass flux of leakage from Haul Road Pond - PW4		M gHRp4 =	0.00000 (mg/s)	
mass flux of leakage from RTH Pond - PW3		M gRTHp =	0.00000 (mg/s)	
mass flux of liner leakage from WWTF pond		M gWTFp =	0.00000 (mg/s)	
mass flux of surface water into SW-004A		M s4A =	9.06523 (mg/s)	
mass flux of ground water into SW-004A		M g4A =	0.07500 (mg/s)	
mass flux of West Pit overflow		M sms =	#N/A (mg/s)	
mass flux of liner leakage from Cat 1 stockpile		M gC12 =	0.00021 (mg/s)	
mass flux of liner leakage from Cat 1 sumps		M gC12s =	0.00000 (mg/s)	
mass flux of seepage from Overburden (Cat 1)		M gO12 =	0.01162 (mg/s)	
mass flux of seepage from Overburden Pond - PW7		M gOp7 =	0.00045 (mg/s)	
mass flux of surface water into SW-005		M s5 =	2.25219 (mg/s)	
mass flux of ground water into SW-005		M g5 =	0.12270 (mg/s)	
mass flux of surface water into USGS Gage		M s6 =	0.00915 (mg/s)	
mass flux of ground water into USGS Gage		M g6 =	0.02540 (mg/s)	
mass flux of surface water into Colby Lake		M scl =	4.75398 (mg/s)	
mass flux of ground water into Colby Lake		M gcl =	0.06324 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP		M shl =	0.00552 (mg/s)	
Mass balance at each node		High Flow		
		mass flux in river at SW-001	M r1 =	1.2149 (mg/s)
	mass flux in river at SW-002	M r2 =	2.4695 (mg/s)	
	mass flux in river at SW-003	M r3 =	3.2714 (mg/s)	
	mass flux in river at SW-004	M r4 =	4.0983 (mg/s)	
	mass flux in river at SW-004A	M r4A =	13.2508 (mg/s)	
	mass flux in river at SW-005	M r5 =	15.6257 (mg/s)	
	mass flux in river at USGS Gage	M r6 =	15.6603 (mg/s)	
Convert mass flux to concentration	High Flow			
	concentration in river at SW-001	C r1 =	0.00050 (mg/L)	
	concentration in river at SW-002	C r2 =	0.00050 (mg/L)	
	concentration in river at SW-003	C r3 =	0.00050 (mg/L)	
	concentration in river at SW-004	C r4 =	0.00050 (mg/L)	
	concentration in river at SW-004A	C r4A =	0.00050 (mg/L)	
	concentration in river at SW-005	C r5 =	0.00051 (mg/L)	
	concentration in river at USGS Gage	C r6 =	0.00051 (mg/L)	
	concentration in Colby Lake (H)	C cl =	0.00054 (mg/L)	

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 5 Sulfate		
Input concentration data	concentration of surface water into SW-001	C_s1 =	9.0000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	9.0000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	9.0000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	9.0000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	9.0000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	9.0000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	9.0000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	9.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	9.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	22.0000 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	16.1300 (mg/L)
	concentration of ground water into SW-002	C_g2 =	16.1300 (mg/L)
	concentration of ground water into SW-003	C_g3 =	16.1300 (mg/L)
	concentration of ground water into SW-004	C_g4 =	16.1300 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	16.1300 (mg/L)
	concentration of ground water into SW-005	C_g5 =	16.1300 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	16.1300 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	16.1300 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from west pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	175.3363 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	1,659.0402 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	1,699.6882 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	2,340.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	2,311.9128 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	35.1700 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	68.3000 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	175.3363 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	1,659.0402 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	1,699.6882 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	2,340.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	2,311.9128 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	35.1700 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	35.1700 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	16.1300 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	16.1300 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	16.1300 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	960.9200 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	21,438.09900 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	82.16622 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	622.60000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	22,255.02075 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	153.87460 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	14,329.57913 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	48.57334 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	8.66418 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	6.04270 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00134 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	14,555.70055 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	144.02284 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from west pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	6.04270 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	10.43590 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	14.05748 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	76.11262 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00131 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00164 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00308 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	18.81988 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00614 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.01315 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.11574 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	163,174.21694 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	633.38448 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	12.61644 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00384 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	417.57478 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	35.35856 (mg/s)
	mass flux of surface water into SW-005	M_s5 =	40,539.35173 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	1,036.20733 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	164.77208 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	214.54513 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	85,571.55900 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	534.08043 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	99.33300 (mg/s)
Mass balance at each node	mass flux in river at SW-001	M_r1 =	22,142.8652 (mg/s)
	mass flux in river at SW-002	M_r2 =	44,551.7806 (mg/s)
	mass flux in river at SW-003	M_r3 =	58,944.6213 (mg/s)
	mass flux in river at SW-004	M_r4 =	73,769.9556 (mg/s)
	mass flux in river at SW-004A	M_r4A =	238,043.1107 (mg/s)
	mass flux in river at SW-005	M_r5 =	279,618.6697 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	279,997.9869 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	366,202.9594 (mg/s)
	concentration in river at SW-001	C_r1 =	9.16735 (mg/L)
	concentration in river at SW-002	C_r2 =	9.09642 (mg/L)
	concentration in river at SW-003	C_r3 =	9.07829 (mg/L)
	concentration in river at SW-004	C_r4 =	9.08288 (mg/L)
	concentration in river at SW-004A	C_r4A =	9.05148 (mg/L)
	concentration in river at SW-005	C_r5 =	9.05870 (mg/L)
	concentration in river at USGS Gage	C_r6 =	9.06171 (mg/L)
	concentration in Colby Lake (H)	C_cl =	9.32038 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case		Year 5	
Parameter	Thallium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0004 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0004 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0004 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0004 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0004 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0004 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0004 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0004 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0004 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0003 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0000 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0000 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0000 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0000 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0000 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0000 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0000 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0000 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from west pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0001 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0000 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0001 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0000 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	0.0000 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0000 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0000 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0000 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	0.0009 (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M_s1 =	0.95280 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00002 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.00809 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	0.98911 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.00004 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.63687 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00001 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.64692 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.00004 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from west pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00009 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00002 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00000 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	7.25219 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.00016 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	0.00004 (mg/s)
	mass flux of surface water into SW-005	M_s5 =	1.80175 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.00026 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.00732 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.00005 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	3.80318 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.00013 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00441 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	0.9609 (mg/s)
	mass flux in river at SW-002	M_r2 =	1.9501 (mg/s)
	mass flux in river at SW-003	M_r3 =	2.5870 (mg/s)
	mass flux in river at SW-004	M_r4 =	3.2340 (mg/s)
	mass flux in river at SW-004A	M_r4A =	10.4864 (mg/s)
	mass flux in river at SW-005	M_r5 =	12.2884 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	12.2958 (mg/s)
	mass flux into Colby Lake	M_cl =	16.1035 (mg/s)
	High Flow		
	concentration in river at SW-001	C_r1 =	0.00040 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00040 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00040 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00040 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00040 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00040 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00040 (mg/L)
	concentration in Colby Lake (H	C_cl =	0.00039 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case		Year 5	
Parameter		Vanadium	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0009 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0009 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0009 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0009 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0009 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0009 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0009 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0009 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0009 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0043 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0043 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0043 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0043 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0043 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0043 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0043 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0043 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0043 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from west pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0270 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.5014 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.5137 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0642 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0056 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0017 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.0014 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0270 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.5014 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.5137 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0642 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0056 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0017 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	0.0017 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0043 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0043 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0043 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.1932 (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M_s1 =	2.14381 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.02190 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.12169 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	2.22550 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.04102 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	1.43296 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.01295 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00262 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00183 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	1.45557 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.03839 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from west pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00183 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00029 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00003 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00374 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00093 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00002 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	16.31742 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.16885 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.00194 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.00856 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	0.00174 (mg/s)
	mass flux of surface water into SW-005	M_s5 =	4.05394 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.27624 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.01648 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.05719 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	8.55716 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.14238 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00993 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	2.2874 (mg/s)
	mass flux in river at SW-002	M_r2 =	4.5539 (mg/s)
	mass flux in river at SW-003	M_r3 =	6.0043 (mg/s)
	mass flux in river at SW-004	M_r4 =	7.5051 (mg/s)
	mass flux in river at SW-004A	M_r4A =	24.0036 (mg/s)
	mass flux in river at SW-005	M_r5 =	28.3338 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	28.4074 (mg/s)
	mass flux into Colby Lake	M_cl =	37.1169 (mg/s)
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C_r1 =	0.00095 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00093 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00092 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00092 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00091 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00092 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00092 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.00102 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case		Year 5	
Parameter	Zinc		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0160 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0160 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0160 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0160 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0160 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0160 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0160 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0160 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0620 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0073 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0275 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0275 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0275 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0275 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0275 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0275 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0275 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0275 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from west pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0900 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0900 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0900 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0900 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	26.0000 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0046 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.0030 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0900 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0900 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0900 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0900 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	26.0000 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0046 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	0.0046 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0275 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0275 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0275 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	2.0185 (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M_s1 =	38.11218 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.14009 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.20744 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	39.56448 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.26234 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	25.47481 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.08281 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00047 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00032 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	25.87680 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.24554 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from west pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00032 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00040 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.15809 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00987 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00003 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00244 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00001 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00002 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00024 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	290.08750 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	1.07986 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.00648 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.01834 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	0.00458 (mg/s)
	mass flux of surface water into SW-005	M_s5 =	72.06996 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	1.76663 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.29293 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.36578 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	152.12722 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.91055 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.68429 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	38.4597 (mg/s)
	mass flux in river at SW-002	M_r2 =	78.2865 (mg/s)
	mass flux in river at SW-003	M_r3 =	103.8449 (mg/s)
	mass flux in river at SW-004	M_r4 =	130.1387 (mg/s)
	mass flux in river at SW-004A	M_r4A =	421.3355 (mg/s)
	mass flux in river at SW-005	M_r5 =	495.1721 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	495.8308 (mg/s)
	mass flux into Colby Lake	M_cl =	649.5528 (mg/s)
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C_r1 =	0.01592 (mg/L)
	concentration in river at SW-002	C_r2 =	0.01598 (mg/L)
	concentration in river at SW-003	C_r3 =	0.01599 (mg/L)
	concentration in river at SW-004	C_r4 =	0.01602 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.01602 (mg/L)
	concentration in river at SW-005	C_r5 =	0.01604 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.01605 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.01640 (mg/L)

***Appendix H.10***  
***Partridge River***  
***Reasonable Alternative***  
***Year 10***

## Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

### FLOWS

Case	Year 10			
Flows	Low Flow Conditions (no surface runoff)			
Total flow in Partridge River	flow in river at SW-001	Q_r1_L =	1.18	(cfs)
	flow in river at SW-002	Q_r2_L =	1.49	(cfs)
	flow in river at SW-003	Q_r3_L =	1.59	(cfs)
	flow in river at SW-004	Q_r4_L =	2.00	(cfs)
	flow in river at SW-004A	Q_r4a_L =	3.44	(cfs)
	flow in river at SW-005	Q_r5_L =	5.71	(cfs)
	flow in river at USGS Gage	Q_r6_L =	6.18	(cfs)
	total flow into Colby Lake	Q_cl_L =	7.74	(cfs)
	flow check	Q_ck_L =	7.74	(cfs)
Input flow data	surface water flow into SW-001	Q_s1_L =	-	(cfs)
	surface water flow into SW-002	Q_s2_L =	-	(cfs)
	surface water flow into SW-003	Q_s3_L =	-	(cfs)
	surface water flow into SW-004	Q_s4_L =	-	(cfs)
	surface water flow into SW-004A	Q_s4a_L =	-	(cfs)
	surface water flow into SW-005	Q_s5_L =	-	(cfs)
	surface water flow into USGS Gage	Q_s6_L =	-	(cfs)
	surface water flow into Colby Lake	Q_scl_L =	-	(cfs)
	surface water inflow from Hoyt Lakes WWTP	Q_shl_L =	0.39	(cfs)
	surface water inflow from discharges upstream of PM-1	Q_sns_L =	1.00	(cfs)
	surface water flow from West Pit overflow	Q_sms_L =	-	(cfs)
	ground water flow into SW-001	Q_g1_L =	0.18	(cfs)
	ground water flow into SW-002	Q_g2_L =	0.31	(cfs)
	ground water flow into SW-003	Q_g3_L =	0.10	(cfs)
	ground water flow into SW-004	Q_g4_L =	0.31	(cfs)
	ground water flow into SW-004A	Q_g4a_L =	1.38	(cfs)
	ground water flow into SW-005	Q_g5_L =	2.27	(cfs)
	ground water flow into USGS Gage	Q_g6_L =	0.47	(cfs)
	ground water flow into Colby Lake	Q_gcl_L =	1.17	(cfs)
	ground water seepage from East Pit to SW-003	Q_gep_003_L =	-	(cfs)
	ground water seepage from East Pit to SW-004	Q_gep_004_L =	-	(cfs)
	ground water seepage from West Pit	Q_gwp_L =	-	(cfs)
	ground water liner leakage from Cat 1 stockpile	Q_gC12_L =	0.0070	(cfs)
	ground water liner leakage from Cat 2/3 stockpile to SW-003	Q_gC3_003_L =	0.0000	(cfs)
	ground water liner leakage from Cat 2/3 stockpile to SW-004	Q_gC3_004_L =	-	(cfs)
	ground water liner leakage from Cat 3LO stockpile to SW-003	Q_gC3LO_003_L =	0.0000	(cfs)
	ground water liner leakage from Cat 3LO stockpile to SW-004	Q_gC3LO_004_L =	0.0000	(cfs)
	ground water liner leakage from Cat 4 stockpile	Q_gC4_L =	0.0000	(cfs)
	ground water liner leakage from LO SP	Q_gC4LO_L =	0.0000	(cfs)
	ground water seepage from Overburden Storage	Q_gOS_L =	0.0765	(cfs)
	ground water seepage from Overburden (Cat 1)	Q_gO12_L =	0.0457	(cfs)
	ground water liner leakage from Cat 1 sumps	Q_gC12s_L =	0.0000	(cfs)
	ground water liner leakage from Cat 2/3 sumps	Q_gC3s_L =	0.0000	(cfs)
	ground water liner leakage from Cat 3LO sumps	Q_gC3LOs_L =	0.0000	(cfs)
	ground water liner leakage from Cat 4 sumps	Q_gC4s_L =	0.0000	(cfs)
	ground water liner leakage from LO SP sumps	Q_gC4LOs_L =	0.0000	(cfs)
	ground water seepage from Overburden pond - PW1	Q_gOp1_L =	0.0189	(cfs)
	ground water seepage from Overburden pond - PW7	Q_gOp7_L =	-	(cfs)
	ground water leakage from Haul Road pond - PW2	Q_gHRp2_L =	0.0000	(cfs)
	ground water leakage from Haul Road pond - PW4	Q_gHRp4_L =	0.0000	(cfs)
	ground water leakage from RTH pond - PW3	Q_gRTHp_L =	0.0000	(cfs)
	ground water liner leakage from WWTF pond	Q_gWTFp_L =	0.000051	(cfs)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case		Year 10	
Parameter	Silver		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0001 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0001 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0001 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0001 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0001 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0001 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0001 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0001 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0001 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0001 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0006 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0006 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0006 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0006 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0006 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0006 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0006 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0006 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0007 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0007 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0007 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0007 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0007 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	- (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0007 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0007 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0007 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0007 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0007 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	- (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0006 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0006 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0006 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0008 (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00280 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.00340 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.00482 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00163 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.00482 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	- (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00000 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.02155 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.00014 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.03533 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.00732 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.01821 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00110 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	0.0062 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.0110 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.0126 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.0175 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.0362 (mg/s)
	mass flux in river at SW-005	M_r5 =	0.0745 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	0.0818 (mg/s)
	mass flux into Colby Lake	M_cl =	0.1011 (mg/s)
	Low Flow		
	concentration in river at SW-001	C_r1 =	0.00019 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00026 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00028 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00031 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00040 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00046 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00047 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.00015 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case	Year 10			
Parameter	Aluminum			
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0700 (mg/L)	
	concentration of surface water into SW-002	C s2 =	0.0700 (mg/L)	
	concentration of surface water into SW-003	C s3 =	0.0700 (mg/L)	
	concentration of surface water into SW-004	C s4 =	0.0700 (mg/L)	
	concentration of surface water into SW-004A	C s4A =	0.0700 (mg/L)	
	concentration of surface water into SW-005	C s5 =	0.0700 (mg/L)	
	concentration of surface water into USGS Gage	C s6 =	0.0700 (mg/L)	
	concentration of surface water into Colby Lake	C scl =	0.0700 (mg/L)	
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0700 (mg/L)	
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0173 (mg/L)	
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)	
	concentration of ground water into SW-001	C g1 =	0.1250 (mg/L)	
	concentration of ground water into SW-002	C g2 =	0.1250 (mg/L)	
	concentration of ground water into SW-003	C g3 =	0.1250 (mg/L)	
	concentration of ground water into SW-004	C g4 =	0.1250 (mg/L)	
	concentration of ground water into SW-004A	C g4A =	0.1250 (mg/L)	
	concentration of ground water into SW-005	C g5 =	0.1250 (mg/L)	
	concentration of ground water into USGS Gage	C g6 =	0.1250 (mg/L)	
	concentration of ground water into Colby Lake	C gcl =	0.1250 (mg/L)	
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)	
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)	
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	1.6800 (mg/L)	
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	1.6800 (mg/L)	
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	1.6800 (mg/L)	
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	1.6800 (mg/L)	
	concentration of liner leakage from LOSP	C gC4LO =	83.0000 (mg/L)	
	concentration of seepage from Overburden (Storage)	C gOS =	0.4106 (mg/L)	
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.1400 (mg/L)	
	concentration of liner leakage from Cat 1 sumps	C gC12s =	1.6800 (mg/L)	
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	1.6800 (mg/L)	
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	1.6800 (mg/L)	
	concentration of liner leakage from Cat 4 sumps	C gC4s =	1.6800 (mg/L)	
	concentration of liner leakage from LOSP sumps	C gC4LOs =	83.0000 (mg/L)	
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.4106 (mg/L)	
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)	
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.1250 (mg/L)	
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.1250 (mg/L)	
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.1250 (mg/L)	
	concentration of liner leakage from WWTF pond	C_gWTFp =	4.4167 (mg/L)	
	Convert concentration to mass flux	Low Flow		
		mass flux of surface water into SW-001	M s1 =	(mg/s)
		mass flux of ground water into SW-001	M g1 =	0.63675 (mg/s)
		mass flux of surface discharges from upstream of PM-1	M sns =	0.48959 (mg/s)
mass flux of surface water into SW-002		M s2 =	(mg/s)	
mass flux of ground water into SW-002		M g2 =	1.09446 (mg/s)	
mass flux of surface water into SW-003		M s3 =	(mg/s)	
mass flux of ground water into SW-003		M g3 =	0.37030 (mg/s)	
mass flux of seepage from East Pit to SW-003		M gep_003 =	#N/A (mg/s)	
mass flux of liner leakage from Cat 2/3 stockpile to SW-003		M gC3_003 =	0.00158 (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-003		M gC3LO_003 =	0.00014 (mg/s)	
mass flux of liner leakage from Cat 2/3 sumps to SW-003		M gC3s_003 =	0.00000 (mg/s)	
mass flux of surface water into SW-004		M s4 =	(mg/s)	
mass flux of ground water into SW-004		M g4 =	1.09514 (mg/s)	
mass flux of seepage from East Pit to SW-004		M gep_004 =	#N/A (mg/s)	
mass flux of seepage from West Pit		M gwp =	#N/A (mg/s)	
mass flux of liner leakage from Cat 2/3 stockpile to SW-004		M gC3_004 =	- (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-004		M gC3LO_004 =	0.00014 (mg/s)	
mass flux of liner leakage from Cat 4 stockpile		M gC4 =	0.00026 (mg/s)	
mass flux of liner leakage from LOSP		M gC4LO =	0.01092 (mg/s)	
mass flux of seepage from Overburden (Storage)		M gOS =	0.88859 (mg/s)	
mass flux of liner leakage from Cat 3LO sumps to SW-004		M gC3LOs_004 =	0.00000 (mg/s)	
mass flux of liner leakage from Cat 4 sumps		M gC4s =	0.00000 (mg/s)	
mass flux of liner leakage from LOSP sumps		M gC4LOs =	0.00011 (mg/s)	
mass flux of seepage from Overburden Ponds - PW1		M gOp1 =	0.21972 (mg/s)	
mass flux of leakage from Haul Road Pond - PW2		M gHRp2 =	0.00005 (mg/s)	
mass flux of leakage from Haul Road Pond - PW4		M gHRp4 =	0.00010 (mg/s)	
mass flux of leakage from RTH Pond - PW3		M gRTHp =	0.00000 (mg/s)	
mass flux of liner leakage from WWTF pond		M gWTFp =	0.00641 (mg/s)	
mass flux of surface water into SW-004A		M s4A =	- (mg/s)	
mass flux of ground water into SW-004A		M g4A =	4.89696 (mg/s)	
mass flux of West Pit overflow		M sms =	#N/A (mg/s)	
mass flux of liner leakage from Cat 1 stockpile		M gC12 =	0.33433 (mg/s)	
mass flux of liner leakage from Cat 1 sumps		M gC12s =	0.00004 (mg/s)	
mass flux of seepage from Overburden (Cat 1)		M gO12 =	0.18099 (mg/s)	
mass flux of seepage from Overburden Pond - PW7		M gOp7 =	#N/A (mg/s)	
mass flux of surface water into SW-005		M s5 =	- (mg/s)	
mass flux of ground water into SW-005		M g5 =	8.03013 (mg/s)	
mass flux of surface water into USGS Gage		M s6 =	- (mg/s)	
mass flux of ground water into USGS Gage		M g6 =	1.66263 (mg/s)	
mass flux of surface water into Colby Lake		M scl =	- (mg/s)	
mass flux of ground water into Colby Lake		M gcl =	4.13888 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP		M shl =	0.77259 (mg/s)	
Mass balance at each node	Low Flow			
	mass flux in river at SW-001	M r1 =	1.1263 (mg/s)	
	mass flux in river at SW-002	M r2 =	2.2208 (mg/s)	
	mass flux in river at SW-003	M r3 =	2.5928 (mg/s)	
	mass flux in river at SW-004	M r4 =	4.8143 (mg/s)	
	mass flux in river at SW-004A	M r4A =	10.2266 (mg/s)	
	mass flux in river at SW-005	M r5 =	18.2567 (mg/s)	
	mass flux in river at USGS Gage	M r6 =	19.9193 (mg/s)	
	mass flux into Colby Lake	M cl =	24.8308 (mg/s)	
Convert mass flux to concentration	Low Flow			
	concentration in river at SW-001	C r1 =	0.03373 (mg/L)	
	concentration in river at SW-002	C r2 =	0.05269 (mg/L)	
	concentration in river at SW-003	C r3 =	0.05747 (mg/L)	
	concentration in river at SW-004	C r4 =	0.08509 (mg/L)	
	concentration in river at SW-004A	C r4A =	0.10516 (mg/L)	
	concentration in river at SW-005	C r5 =	0.11306 (mg/L)	
	concentration in river at USGS Gage	C r6 =	0.11396 (mg/L)	
	concentration in Colby Lake (H)	C cl =	0.07634 (mg/L)	

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 10 Arsenic		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0021 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0021 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0021 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0021 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0021 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0021 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0021 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0021 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0021 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0065 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0022 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0022 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0022 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0022 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0022 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0022 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0022 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0022 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.2535 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.7100 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.7100 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.7100 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.0938 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0016 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.0027 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.2535 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.7100 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.7100 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.7100 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0938 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0016 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0022 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0022 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0022 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.1549 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	(mg/s)
	mass flux of ground water into SW-001	M g1 =	0.01100 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.18395 (mg/s)
	mass flux of surface water into SW-002	M s2 =	(mg/s)
	mass flux of ground water into SW-002	M g2 =	0.01891 (mg/s)
	mass flux of surface water into SW-003	M s3 =	(mg/s)
	mass flux of ground water into SW-003	M g3 =	0.00640 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.00067 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00006 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	(mg/s)
	mass flux of ground water into SW-004	M g4 =	0.01892 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00006 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00011 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.00338 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.00083 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00022 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.08462 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	0.05044 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	0.00349 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	- (mg/s)
	mass flux of ground water into SW-005	M g5 =	0.13876 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.02873 (mg/s)
mass flux of surface water into Colby Lake	M scl =	- (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	0.07152 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.02329 (mg/s)	
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M r1 =	0.1950 (mg/s)
	mass flux in river at SW-002	M r2 =	0.2139 (mg/s)
	mass flux in river at SW-003	M r3 =	0.2210 (mg/s)
	mass flux in river at SW-004	M r4 =	0.2445 (mg/s)
	mass flux in river at SW-004A	M r4A =	0.3831 (mg/s)
	mass flux in river at SW-005	M r5 =	0.5218 (mg/s)
	mass flux in river at USGS Gage	M r6 =	0.5506 (mg/s)
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C r1 =	0.00584 (mg/L)
	concentration in river at SW-002	C r2 =	0.00507 (mg/L)
	concentration in river at SW-003	C r3 =	0.00490 (mg/L)
	concentration in river at SW-004	C r4 =	0.00432 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00394 (mg/L)
	concentration in river at SW-005	C r5 =	0.00323 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00315 (mg/L)
	concentration in Colby Lake (H)	C cl =	0.00223 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case		Year 10	
Parameter	Boron		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0450 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0450 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0450 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0450 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0450 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0450 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0450 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0450 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0450 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0960 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0870 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0870 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0870 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0870 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0870 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0870 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0870 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0870 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.7600 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.7600 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.7600 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.7600 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.7600 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0622 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.0370 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.7600 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.7600 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.7600 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.7600 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.7600 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0622 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0870 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0870 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0870 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.3191 (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.44318 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	2.71680 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.76175 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.25773 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00071 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00006 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.76221 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00006 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00012 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00010 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.13461 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.03328 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00003 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00007 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00046 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	3.40829 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.15124 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00002 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.04783 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	5.58897 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	1.15719 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	2.88066 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.49667 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	3.1800 (mg/s)
	mass flux in river at SW-002	M_r2 =	3.9217 (mg/s)
	mass flux in river at SW-003	M_r3 =	4.1802 (mg/s)
	mass flux in river at SW-004	M_r4 =	5.1112 (mg/s)
	mass flux in river at SW-004A	M_r4A =	8.7186 (mg/s)
	mass flux in river at SW-005	M_r5 =	14.3075 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	15.4647 (mg/s)
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C_r1 =	0.09463 (mg/L)
	concentration in river at SW-002	C_r2 =	0.09304 (mg/L)
	concentration in river at SW-003	C_r3 =	0.09266 (mg/L)
	concentration in river at SW-004	C_r4 =	0.09034 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.08966 (mg/L)
	concentration in river at SW-005	C_r5 =	0.08860 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.08848 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.05099 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 10 Barium		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0077 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0077 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0077 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0077 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0077 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0077 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0077 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0077 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0077 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0050 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0219 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0219 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0219 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0219 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0219 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0219 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0219 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0219 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.1900 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.1900 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.1900 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.1900 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.1900 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0168 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.0140 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.1900 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.1900 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.1900 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.1900 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.1900 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0168 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0219 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0219 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0219 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	0.0792 (mg/L)
		Low Flow	
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	(mg/s)
	mass flux of ground water into SW-001	M g1 =	0.11166 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.14150 (mg/s)
	mass flux of surface water into SW-002	M s2 =	(mg/s)
	mass flux of ground water into SW-002	M g2 =	0.19193 (mg/s)
	mass flux of surface water into SW-003	M s3 =	(mg/s)
	mass flux of ground water into SW-003	M g3 =	0.06494 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.00018 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00002 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	(mg/s)
	mass flux of ground water into SW-004	M g4 =	0.19204 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00002 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00003 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00002 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.03643 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.00901 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00001 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00002 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00011 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.85873 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	0.03781 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	0.01810 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	- (mg/s)
	mass flux of ground water into SW-005	M g5 =	1.40816 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.29156 (mg/s)
mass flux of surface water into Colby Lake	M scl =	- (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	0.72579 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.08476 (mg/s)	
		Low Flow	
Mass balance at each node	mass flux in river at SW-001	M r1 =	0.2532 (mg/s)
	mass flux in river at SW-002	M r2 =	0.4451 (mg/s)
	mass flux in river at SW-003	M r3 =	0.5102 (mg/s)
	mass flux in river at SW-004	M r4 =	0.7479 (mg/s)
	mass flux in river at SW-004A	M r4A =	1.6626 (mg/s)
	mass flux in river at SW-005	M r5 =	3.0707 (mg/s)
	mass flux in river at USGS Gage	M r6 =	3.3623 (mg/s)
	mass flux into Colby Lake	M cl =	4.1728 (mg/s)
Convert mass flux to concentration	concentration in river at SW-001	C r1 =	0.00758 (mg/L)
	concentration in river at SW-002	C r2 =	0.01056 (mg/L)
	concentration in river at SW-003	C r3 =	0.01131 (mg/L)
	concentration in river at SW-004	C r4 =	0.01322 (mg/L)
	concentration in river at SW-004A	C r4A =	0.01710 (mg/L)
	concentration in river at SW-005	C r5 =	0.01902 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.01924 (mg/L)
	concentration in Colby Lake (H)	C cl =	0.00934 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 10 Beryllium		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0001 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0001 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0001 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0001 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0001 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0001 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0001 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0001 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0001 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0001 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0001 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0001 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0001 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0001 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0001 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0001 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0001 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0001 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0002 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0002 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.0023 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	- (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.0002 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0002 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0023 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	- (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0001 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0001 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0001 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	0.0004 (mg/L)
			Low Flow
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	(mg/s)
	mass flux of ground water into SW-001	M g1 =	0.00074 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.00283 (mg/s)
	mass flux of surface water into SW-002	M s2 =	(mg/s)
	mass flux of ground water into SW-002	M g2 =	0.00127 (mg/s)
	mass flux of surface water into SW-003	M s3 =	(mg/s)
	mass flux of ground water into SW-003	M g3 =	0.00043 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep 003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3 003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO 003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s 003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	(mg/s)
	mass flux of ground water into SW-004	M g4 =	0.00127 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep 004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3 004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO 004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	- (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs 004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00000 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.00568 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	0.00004 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	- (mg/s)
	mass flux of ground water into SW-005	M g5 =	0.00931 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.00193 (mg/s)
mass flux of surface water into Colby Lake	M scl =	- (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	0.00480 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.00110 (mg/s)	
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M r1 =	0.0036 (mg/s)
	mass flux in river at SW-002	M r2 =	0.0048 (mg/s)
	mass flux in river at SW-003	M r3 =	0.0053 (mg/s)
	mass flux in river at SW-004	M r4 =	0.0065 (mg/s)
	mass flux in river at SW-004A	M r4A =	0.0123 (mg/s)
	mass flux in river at SW-005	M r5 =	0.0216 (mg/s)
	mass flux in river at USGS Gage	M r6 =	0.0235 (mg/s)
mass flux into Colby Lake	M cl =	0.0294 (mg/s)	
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C r1 =	0.00011 (mg/L)
	concentration in river at SW-002	C r2 =	0.00011 (mg/L)
	concentration in river at SW-003	C r3 =	0.00012 (mg/L)
	concentration in river at SW-004	C r4 =	0.00012 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00013 (mg/L)
	concentration in river at SW-005	C r5 =	0.00013 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00013 (mg/L)
	concentration in Colby Lake (H	C cl =	0.00010 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 10 Calcium		
Input concentration data	concentration of surface water into SW-001	C s1 =	17.0000 (mg/L)
	concentration of surface water into SW-002	C s2 =	17.0000 (mg/L)
	concentration of surface water into SW-003	C s3 =	17.0000 (mg/L)
	concentration of surface water into SW-004	C s4 =	17.0000 (mg/L)
	concentration of surface water into SW-004A	C s4A =	17.0000 (mg/L)
	concentration of surface water into SW-005	C s5 =	17.0000 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	17.0000 (mg/L)
	concentration of surface water into Colby Lake	C scl =	17.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	17.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	24.5000 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	14.7900 (mg/L)
	concentration of ground water into SW-002	C g2 =	14.7900 (mg/L)
	concentration of ground water into SW-003	C g3 =	14.7900 (mg/L)
	concentration of ground water into SW-004	C g4 =	14.7900 (mg/L)
	concentration of ground water into SW-004A	C g4A =	14.7900 (mg/L)
	concentration of ground water into SW-005	C g5 =	14.7900 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	14.7900 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	14.7900 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	540.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	540.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	540.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	540.0000 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	428.7090 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	9.3700 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	15.8000 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	540.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	540.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	540.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	540.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	428.7090 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	9.3700 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	14.7900 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	14.7900 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	14.7900 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	194.2595 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	(mg/s)
	mass flux of ground water into SW-001	M g1 =	75.34026 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	693.35000 (mg/s)
	mass flux of surface water into SW-002	M s2 =	(mg/s)
	mass flux of ground water into SW-002	M g2 =	129.49691 (mg/s)
	mass flux of surface water into SW-003	M s3 =	(mg/s)
	mass flux of ground water into SW-003	M g3 =	43.81436 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.50675 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.04459 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00044 (mg/s)
	mass flux of surface water into SW-004	M s4 =	(mg/s)
	mass flux of ground water into SW-004	M g4 =	129.57641 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.04459 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.08250 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.05640 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	20.27794 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00042 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00038 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00057 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	5.01400 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00563 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.01206 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.28188 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M g4A =	579.40885 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	107.46352 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.01183 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	20.42604 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	- (mg/s)
	mass flux of ground water into SW-005	M g5 =	950.12439 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	196.72179 (mg/s)
mass flux of surface water into Colby Lake	M scl =	- (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	489.71169 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	187.62900 (mg/s)	
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M r1 =	768.6903 (mg/s)
	mass flux in river at SW-002	M r2 =	898.1872 (mg/s)
	mass flux in river at SW-003	M r3 =	942.5533 (mg/s)
	mass flux in river at SW-004	M r4 =	1,097.9065 (mg/s)
	mass flux in river at SW-004A	M r4A =	1,805.2168 (mg/s)
	mass flux in river at SW-005	M r5 =	2,755.3412 (mg/s)
	mass flux in river at USGS Gage	M r6 =	2,952.0629 (mg/s)
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C r1 =	23.01881 (mg/L)
	concentration in river at SW-002	C r2 =	21.30945 (mg/L)
	concentration in river at SW-003	C r3 =	20.89309 (mg/L)
	concentration in river at SW-004	C r4 =	19.40570 (mg/L)
	concentration in river at SW-004A	C r4A =	18.56378 (mg/L)
	concentration in river at SW-005	C r5 =	17.06252 (mg/L)
	concentration in river at USGS Gage	C r6 =	16.88958 (mg/L)
	concentration in Colby Lake (H	C cl =	16.93825 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case		Year 10	
Parameter		Cadmium	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0001 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0001 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0001 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0001 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0001 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0001 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0001 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0001 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0001 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0001 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0001 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0001 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0001 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0001 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0001 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0001 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0001 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0001 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0002 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0002 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0149 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0001 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0002 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0002 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0149 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0001 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0001 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0001 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0001 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0010 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00051 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.00283 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.00088 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00030 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.00088 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00013 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00003 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00000 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.00392 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.00004 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.00642 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.00133 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.00331 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00110 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	0.0033 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.0042 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.0045 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.0056 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.0095 (mg/s)
	mass flux in river at SW-005	M_r5 =	0.0159 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	0.0173 (mg/s)
	mass flux into Colby Lake	M_cl =	0.0217 (mg/s)
	Low Flow		
	concentration in river at SW-001	C_r1 =	0.00010 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00010 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00010 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00010 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00010 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00010 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00010 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.00010 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 10 Chloride		
Input concentration data	concentration of surface water into SW-001	C s1 =	8.0000 (mg/L)
	concentration of surface water into SW-002	C s2 =	8.0000 (mg/L)
	concentration of surface water into SW-003	C s3 =	8.0000 (mg/L)
	concentration of surface water into SW-004	C s4 =	8.0000 (mg/L)
	concentration of surface water into SW-004A	C s4A =	8.0000 (mg/L)
	concentration of surface water into SW-005	C s5 =	8.0000 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	8.0000 (mg/L)
	concentration of surface water into Colby Lake	C scl =	8.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	8.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	1.6000 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	6.6000 (mg/L)
	concentration of ground water into SW-002	C g2 =	6.6000 (mg/L)
	concentration of ground water into SW-003	C g3 =	6.6000 (mg/L)
	concentration of ground water into SW-004	C g4 =	6.6000 (mg/L)
	concentration of ground water into SW-004A	C g4A =	6.6000 (mg/L)
	concentration of ground water into SW-005	C g5 =	6.6000 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	6.6000 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	6.6000 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	136.3837 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	83.5945 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	79.7982 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	5.6630 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	2.2331 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	5.3500 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	2.3300 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	136.3837 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	83.5945 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	79.7982 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	5.6630 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	2.2331 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	5.3500 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	6.6000 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	6.6000 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	6.6000 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	30.1422 (mg/L)
		Low Flow	
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	(mg/s)
	mass flux of ground water into SW-001	M g1 =	33.62040 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	45.28000 (mg/s)
	mass flux of surface water into SW-002	M s2 =	(mg/s)
	mass flux of ground water into SW-002	M g2 =	57.78767 (mg/s)
	mass flux of surface water into SW-003	M s3 =	(mg/s)
	mass flux of ground water into SW-003	M g3 =	19.55205 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.07845 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00659 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00007 (mg/s)
	mass flux of surface water into SW-004	M s4 =	(mg/s)
	mass flux of ground water into SW-004	M g4 =	57.82314 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00659 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00087 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00029 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	11.57812 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00006 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	2.86285 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00251 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00538 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.04374 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M g4A =	258.55973 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	27.14124 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00299 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	3.01219 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	- (mg/s)
	mass flux of ground water into SW-005	M g5 =	423.99060 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	87.78660 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	218.53260 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl =	88.29600 (mg/s)
		Low Flow	
Mass balance at each node	mass flux in river at SW-001	M r1 =	78.9004 (mg/s)
	mass flux in river at SW-002	M r2 =	136.6881 (mg/s)
	mass flux in river at SW-003	M r3 =	156.3252 (mg/s)
	mass flux in river at SW-004	M r4 =	228.6488 (mg/s)
	mass flux in river at SW-004A	M r4A =	517.3650 (mg/s)
	mass flux in river at SW-005	M r5 =	941.3556 (mg/s)
	mass flux in river at USGS Gage	M r6 =	1,029.1422 (mg/s)
	mass flux into Colby Lake	M cl =	1,335.9708 (mg/s)
		Low Flow	
Convert mass flux to concentration	concentration in river at SW-001	C r1 =	2.36271 (mg/L)
	concentration in river at SW-002	C r2 =	3.24292 (mg/L)
	concentration in river at SW-003	C r3 =	3.46518 (mg/L)
	concentration in river at SW-004	C r4 =	4.04141 (mg/L)
	concentration in river at SW-004A	C r4A =	5.32027 (mg/L)
	concentration in river at SW-005	C r5 =	5.82937 (mg/L)
	concentration in river at USGS Gage	C r6 =	5.88801 (mg/L)
	concentration in Colby Lake (H)	C cl =	7.72252 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 10 Cobalt		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0005 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0005 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0005 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0005 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0005 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0005 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0005 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0005 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0005 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0005 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0017 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0017 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0017 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0017 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0017 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0017 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0017 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0017 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.0384 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.0520 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0520 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0520 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	5.1752 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0011 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.0013 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.0384 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.0520 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.0520 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0520 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	5.1752 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0011 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0017 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0017 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0017 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.2634 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	- (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.00841 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.01415 (mg/s)
	mass flux of surface water into SW-002	M s2 =	- (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.01445 (mg/s)
	mass flux of surface water into SW-003	M s3 =	- (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.00489 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.00005 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	- (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.01446 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00001 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00068 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.00240 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00001 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.00059 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00038 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.06464 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	0.00764 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	0.00168 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	- (mg/s)
	mass flux of ground water into SW-005	M g5 =	0.10600 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.02195 (mg/s)
mass flux of surface water into Colby Lake	M scl =	- (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	0.05463 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.00552 (mg/s)	
Mass balance at each node	mass flux in river at SW-001	M r1 =	0.0226 (mg/s)
	mass flux in river at SW-002	M r2 =	0.0370 (mg/s)
	mass flux in river at SW-003	M r3 =	0.0419 (mg/s)
	mass flux in river at SW-004	M r4 =	0.0605 (mg/s)
	mass flux in river at SW-004A	M r4A =	0.1344 (mg/s)
	mass flux in river at SW-005	M r5 =	0.2404 (mg/s)
	mass flux in river at USGS Gage	M r6 =	0.2624 (mg/s)
	mass flux into Colby Lake	M cl =	0.3225 (mg/s)
Convert mass flux to concentration	concentration in river at SW-001	C r1 =	0.00068 (mg/L)
	concentration in river at SW-002	C r2 =	0.00088 (mg/L)
	concentration in river at SW-003	C r3 =	0.00093 (mg/L)
	concentration in river at SW-004	C r4 =	0.00107 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00138 (mg/L)
	concentration in river at SW-005	C r5 =	0.00149 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00150 (mg/L)
	concentration in Colby Lake (H)	C cl =	0.00064 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 10 Copper		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0017 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0017 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0017 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0017 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0017 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0017 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0017 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0017 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0190 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0012 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0030 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0030 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0030 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0030 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0030 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0030 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0030 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0030 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0920 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0920 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0920 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0920 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	1.2463 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0214 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.0170 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0920 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0920 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_g3LOs =	0.0920 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0920 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	1.2463 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0214 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0030 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0030 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0030 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.1703 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.01503 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.03509 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.02583 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00874 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00009 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.02585 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00001 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00016 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.04640 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.01147 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00025 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.11557 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.01831 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.02198 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.18951 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.03924 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.09768 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.20970 (mg/s)
Mass balance at each node	mass flux in river at SW-001	M_r1 =	0.0501 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.0759 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.0848 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.1689 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.3248 (mg/s)
	mass flux in river at SW-005	M_r5 =	0.5143 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	0.5535 (mg/s)
	mass flux into Colby Lake	M_cl =	0.8609 (mg/s)
Convert mass flux to concentration	concentration in river at SW-001	C_r1 =	0.00150 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00180 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00188 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00299 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00334 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00318 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00317 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.00203 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 10 Fluoride		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0700 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0700 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0700 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0700 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0700 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0700 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0700 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0700 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0700 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.1400 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.2800 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.2800 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.2800 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.2800 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.2800 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.2800 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.2800 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.2800 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.0621 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.0621 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0621 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0621 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.0623 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.2239 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.4200 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.0621 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.0621 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.0621 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0621 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0623 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.2239 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.2800 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.2800 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.2800 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.1917 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	(mg/s)
	mass flux of ground water into SW-001	M g1 =	1.42632 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	3.96200 (mg/s)
	mass flux of surface water into SW-002	M s2 =	(mg/s)
	mass flux of ground water into SW-002	M g2 =	2.45160 (mg/s)
	mass flux of surface water into SW-003	M s3 =	(mg/s)
	mass flux of ground water into SW-003	M g3 =	0.82948 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.00006 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	(mg/s)
	mass flux of ground water into SW-004	M g4 =	2.45310 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00001 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.48453 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.11981 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00011 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00023 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00028 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M g4A =	10.96920 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	0.01236 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	0.54297 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	- (mg/s)
	mass flux of ground water into SW-005	M g5 =	17.98748 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	3.72428 (mg/s)
mass flux of surface water into Colby Lake	M scl =	- (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	9.27108 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.77259 (mg/s)	
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M r1 =	5.3883 (mg/s)
	mass flux in river at SW-002	M r2 =	7.8399 (mg/s)
	mass flux in river at SW-003	M r3 =	8.6695 (mg/s)
	mass flux in river at SW-004	M r4 =	11.7275 (mg/s)
	mass flux in river at SW-004A	M r4A =	23.2521 (mg/s)
	mass flux in river at SW-005	M r5 =	41.2395 (mg/s)
	mass flux in river at USGS Gage	M r6 =	44.9638 (mg/s)
mass flux into Colby Lake	M cl =	55.0075 (mg/s)	
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C r1 =	0.16136 (mg/L)
	concentration in river at SW-002	C r2 =	0.18600 (mg/L)
	concentration in river at SW-003	C r3 =	0.19217 (mg/L)
	concentration in river at SW-004	C r4 =	0.20729 (mg/L)
	concentration in river at SW-004A	C r4A =	0.23911 (mg/L)
	concentration in river at SW-005	C r5 =	0.25538 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.25725 (mg/L)
concentration in Colby Lake (H)	C cl =	0.09647 (mg/L)	

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case		Year 10	
Parameter	Iron		
Input concentration data	concentration of surface water into SW-001	C_s1 =	1.6000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	1.6000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	1.6000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	1.6000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	1.6000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	1.6000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	1.6000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	1.6000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	1.6000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0300 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	2.8440 (mg/L)
	concentration of ground water into SW-002	C_g2 =	2.8440 (mg/L)
	concentration of ground water into SW-003	C_g3 =	2.8440 (mg/L)
	concentration of ground water into SW-004	C_g4 =	2.8440 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	2.8440 (mg/L)
	concentration of ground water into SW-005	C_g5 =	2.8440 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	2.8440 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	2.8440 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.8100 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.8100 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.8100 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.8100 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	235.0000 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.2255 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.1500 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.8100 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.8100 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.8100 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.8100 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	235.0000 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.2255 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	2.8440 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	2.8440 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	2.8440 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	12.0635 (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	14.48734 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.84900 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	24.90123 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	8.42516 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00076 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00007 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	24.91652 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00007 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00012 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.03092 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.48801 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00031 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.12067 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00108 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00232 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.01750 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	111.41574 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.16120 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00002 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.19392 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	182.70140 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	37.82804 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	94.16768 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	17.65920 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	15.3363 (mg/s)
	mass flux in river at SW-002	M_r2 =	40.2376 (mg/s)
	mass flux in river at SW-003	M_r3 =	48.6636 (mg/s)
	mass flux in river at SW-004	M_r4 =	74.2411 (mg/s)
	mass flux in river at SW-004A	M_r4A =	186.0119 (mg/s)
	mass flux in river at SW-005	M_r5 =	368.7134 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	406.5414 (mg/s)
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C_r1 =	0.45925 (mg/L)
	concentration in river at SW-002	C_r2 =	0.95463 (mg/L)
	concentration in river at SW-003	C_r3 =	1.07870 (mg/L)
	concentration in river at SW-004	C_r4 =	1.31222 (mg/L)
	concentration in river at SW-004A	C_r4A =	1.91284 (mg/L)
	concentration in river at SW-005	C_r5 =	2.28327 (mg/L)
	concentration in river at USGS Gage	C_r6 =	2.32594 (mg/L)
	concentration in Colby Lake (H)	C_cl =	1.71172 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 10 Hardness		
Input concentration data	concentration of surface water into SW-001	C s1 =	110.0000 (mg/L)
	concentration of surface water into SW-002	C s2 =	110.0000 (mg/L)
	concentration of surface water into SW-003	C s3 =	110.0000 (mg/L)
	concentration of surface water into SW-004	C s4 =	110.0000 (mg/L)
	concentration of surface water into SW-004A	C s4A =	110.0000 (mg/L)
	concentration of surface water into SW-005	C s5 =	110.0000 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	110.0000 (mg/L)
	concentration of surface water into Colby Lake	C scl =	110.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	110.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	110.0000 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	66.4200 (mg/L)
	concentration of ground water into SW-002	C g2 =	66.4200 (mg/L)
	concentration of ground water into SW-003	C g3 =	66.4200 (mg/L)
	concentration of ground water into SW-004	C g4 =	66.4200 (mg/L)
	concentration of ground water into SW-004A	C g4A =	66.4200 (mg/L)
	concentration of ground water into SW-005	C g5 =	66.4200 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	66.4200 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	66.4200 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	1,729.3495 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	1,729.3495 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	1,729.3495 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	1,729.3495 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	3,723.2506 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	43.5200 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	71.5000 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	1,729.3495 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	1,729.3495 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	1,729.3495 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	1,729.3495 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	3,723.2506 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	43.5200 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	66.4200 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	66.4200 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	66.4200 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	742.0281 (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M s1 =	(mg/s)
	mass flux of ground water into SW-001	M g1 =	338.34348 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	3,113.00000 (mg/s)
	mass flux of surface water into SW-002	M s2 =	(mg/s)
	mass flux of ground water into SW-002	M g2 =	581.55406 (mg/s)
	mass flux of surface water into SW-003	M s3 =	(mg/s)
	mass flux of ground water into SW-003	M g3 =	196.76471 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	1.62288 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.14279 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00139 (mg/s)
	mass flux of surface water into SW-004	M s4 =	(mg/s)
	mass flux of ground water into SW-004	M g4 =	581.91110 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.14279 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.26422 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.48985 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	94.18314 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00133 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00121 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00496 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	23.28806 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.02527 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.05414 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00002 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	1.07670 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M g4A =	2,602.05112 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	344.15182 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.03789 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	92.43429 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	- (mg/s)
	mass flux of ground water into SW-005	M g5 =	4,266.88722 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	- (mg/s)
mass flux of ground water into USGS Gage	M g6 =	883.45242 (mg/s)	
mass flux of surface water into Colby Lake	M scl =	- (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	2,199.23262 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	1,214.07000 (mg/s)	
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M r1 =	3,451.3435 (mg/s)
	mass flux in river at SW-002	M r2 =	4,032.8975 (mg/s)
	mass flux in river at SW-003	M r3 =	4,231.4293 (mg/s)
	mass flux in river at SW-004	M r4 =	4,932.8735 (mg/s)
	mass flux in river at SW-004A	M r4A =	7,971.5487 (mg/s)
	mass flux in river at SW-005	M r5 =	12,238.4359 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M r6 =	13,121.8883 (mg/s)
	mass flux into Colby Lake	M cl =	16,535.1909 (mg/s)
	Low Flow		
	concentration in river at SW-001	C r1 =	103.35220 (mg/L)
	concentration in river at SW-002	C r2 =	95.68032 (mg/L)
	concentration in river at SW-003	C r3 =	93.79590 (mg/L)
	concentration in river at SW-004	C r4 =	87.18943 (mg/L)
	concentration in river at SW-004A	C r4A =	81.97468 (mg/L)
	concentration in river at SW-005	C r5 =	75.78681 (mg/L)
	concentration in river at USGS Gage	C r6 =	75.07401 (mg/L)
	concentration in Colby Lake (H)	C cl =	104.96861 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case		Year 10	
Parameter	Potassium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	1.3000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	1.3000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	1.3000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	1.3000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	1.3000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	1.3000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	1.3000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	1.3000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	1.3000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	2.7000 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	1.7500 (mg/L)
	concentration of ground water into SW-002	C_g2 =	1.7500 (mg/L)
	concentration of ground water into SW-003	C_g3 =	1.7500 (mg/L)
	concentration of ground water into SW-004	C_g4 =	1.7500 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	1.7500 (mg/L)
	concentration of ground water into SW-005	C_g5 =	1.7500 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	1.7500 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	1.7500 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	49.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	49.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	49.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	49.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	38.0000 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	2.2600 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	4.4500 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	49.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	49.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	49.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	49.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	38.0000 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	2.2600 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	1.7500 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	1.7500 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	1.7500 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	17.6277 (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	8.91450 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	76.41000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	15.32249 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	5.18426 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.04598 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00405 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00004 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	15.33189 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00405 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00749 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00500 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	4.89094 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00004 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00003 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00005 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	1.20935 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00067 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00143 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.02558 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	68.55750 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	9.75132 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00107 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	5.75290 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	112.42175 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	23.27675 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	57.94425 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	14.34810 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	85.3245 (mg/s)
	mass flux in river at SW-002	M_r2 =	100.6470 (mg/s)
	mass flux in river at SW-003	M_r3 =	105.8813 (mg/s)
	mass flux in river at SW-004	M_r4 =	127.3579 (mg/s)
	mass flux in river at SW-004A	M_r4A =	211.4207 (mg/s)
	mass flux in river at SW-005	M_r5 =	323.8424 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	347.1192 (mg/s)
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C_r1 =	2.55508 (mg/L)
	concentration in river at SW-002	C_r2 =	2.38785 (mg/L)
	concentration in river at SW-003	C_r3 =	2.34702 (mg/L)
	concentration in river at SW-004	C_r4 =	2.25107 (mg/L)
	concentration in river at SW-004A	C_r4A =	2.17412 (mg/L)
	concentration in river at SW-005	C_r5 =	2.00540 (mg/L)
	concentration in river at USGS Gage	C_r6 =	1.98597 (mg/L)
	concentration in Colby Lake (H)	C_cl =	1.39020 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case		Year 10	
Parameter		Magnesium	
Input concentration data	concentration of surface water into SW-001	C_s1 =	8.0000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	8.0000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	8.0000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	8.0000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	8.0000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	8.0000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	8.0000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	8.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	8.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	10.5000 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	8.0200 (mg/L)
	concentration of ground water into SW-002	C_g2 =	8.0200 (mg/L)
	concentration of ground water into SW-003	C_g3 =	8.0200 (mg/L)
	concentration of ground water into SW-004	C_g4 =	8.0200 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	8.0200 (mg/L)
	concentration of ground water into SW-005	C_g5 =	8.0200 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	8.0200 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	8.0200 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	93.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	93.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	93.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	93.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	644.9586 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	4.8800 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	9.0100 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	93.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	93.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	93.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	93.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	644.9586 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	4.8800 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	8.0200 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	8.0200 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	8.0200 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	62.5945 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	40.85388 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	297.15000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	70.22077 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	23.75870 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.08727 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00768 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00007 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	70.26388 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00768 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.01421 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.08485 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	10.56098 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00007 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00007 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00086 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	2.61135 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00305 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00654 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.09083 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	314.18925 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	18.50761 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00204 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	11.64801 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	515.21282 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	106.67402 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	265.55022 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	88.29600 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	338.0039 (mg/s)
	mass flux in river at SW-002	M_r2 =	408.2247 (mg/s)
	mass flux in river at SW-003	M_r3 =	432.0784 (mg/s)
	mass flux in river at SW-004	M_r4 =	515.7228 (mg/s)
	mass flux in river at SW-004A	M_r4A =	860.0697 (mg/s)
	mass flux in river at SW-005	M_r5 =	1,375.2825 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	1,481.9566 (mg/s)
	mass flux into Colby Lake	M_cl =	1,835.8028 (mg/s)
	Low Flow		
	concentration in river at SW-001	C_r1 =	10.12169 (mg/L)
	concentration in river at SW-002	C_r2 =	9.68511 (mg/L)
	concentration in river at SW-003	C_r3 =	9.57766 (mg/L)
	concentration in river at SW-004	C_r4 =	9.11549 (mg/L)
	concentration in river at SW-004A	C_r4A =	8.84445 (mg/L)
	concentration in river at SW-005	C_r5 =	8.51647 (mg/L)
	concentration in river at USGS Gage	C_r6 =	8.47869 (mg/L)
	concentration in Colby Lake (H)	C_cl =	8.05630 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case		Year 10	
Parameter	Manganese		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.1500 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.1500 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.1500 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.1500 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.1500 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.1500 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.1500 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.1500 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.1500 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0086 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.1240 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.1240 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.1240 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.1240 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.1240 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.1240 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.1240 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.1240 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.5796 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.7500 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.7500 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.7500 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	13.2457 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.1604 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.1160 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.5796 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.7500 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.7500 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.7500 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	13.2457 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.1604 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.1240 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.1240 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.1240 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.8547 (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.63166 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.24338 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	1.08571 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.36734 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00070 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00006 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	1.08637 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00006 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00011 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00174 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.34711 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00002 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.08583 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00005 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00010 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00124 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	4.85779 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.11535 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.14996 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	7.96588 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	1.64932 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	4.10576 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	1.65555 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	0.8750 (mg/s)
	mass flux in river at SW-002	M_r2 =	1.9607 (mg/s)
	mass flux in river at SW-003	M_r3 =	2.3289 (mg/s)
	mass flux in river at SW-004	M_r4 =	3.3515 (mg/s)
	mass flux in river at SW-004A	M_r4A =	8.9746 (mg/s)
	mass flux in river at SW-005	M_r5 =	16.9405 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	18.5898 (mg/s)
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C_r1 =	0.02620 (mg/L)
	concentration in river at SW-002	C_r2 =	0.04652 (mg/L)
	concentration in river at SW-003	C_r3 =	0.05162 (mg/L)
	concentration in river at SW-004	C_r4 =	0.06808 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.09229 (mg/L)
	concentration in river at SW-005	C_r5 =	0.10490 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.10636 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.14434 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case	Year 10		
Parameter	Sodium		
Input concentration data	concentration of surface water into SW-001	C s1 =	2.5000 (mg/L)
	concentration of surface water into SW-002	C s2 =	2.5000 (mg/L)
	concentration of surface water into SW-003	C s3 =	2.5000 (mg/L)
	concentration of surface water into SW-004	C s4 =	2.5000 (mg/L)
	concentration of surface water into SW-004A	C s4A =	2.5000 (mg/L)
	concentration of surface water into SW-005	C s5 =	2.5000 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	2.5000 (mg/L)
	concentration of surface water into Colby Lake	C scl =	2.5000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	2.5000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	4.8000 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	13.3300 (mg/L)
	concentration of ground water into SW-002	C g2 =	13.3300 (mg/L)
	concentration of ground water into SW-003	C g3 =	13.3300 (mg/L)
	concentration of ground water into SW-004	C g4 =	13.3300 (mg/L)
	concentration of ground water into SW-004A	C g4A =	13.3300 (mg/L)
	concentration of ground water into SW-005	C g5 =	13.3300 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	13.3300 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	13.3300 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	395.9363 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	681.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	681.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	679.4468 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	80.9276 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	4.6000 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	7.1900 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	395.9363 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	681.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	681.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	679.4468 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	80.9276 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	4.6000 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	13.3300 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	13.3300 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	13.3300 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	168.1098 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	(mg/s)
	mass flux of ground water into SW-001	M g1 =	67.90302 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	135.84000 (mg/s)
	mass flux of surface water into SW-002	M s2 =	(mg/s)
	mass flux of ground water into SW-002	M g2 =	116.71358 (mg/s)
	mass flux of surface water into SW-003	M s3 =	(mg/s)
	mass flux of ground water into SW-003	M g3 =	39.48921 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.63907 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.05623 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00055 (mg/s)
	mass flux of surface water into SW-004	M s4 =	(mg/s)
	mass flux of ground water into SW-004	M g4 =	116.78523 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.05623 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.10381 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.01065 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	9.95502 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00053 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00048 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00011 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	2.46151 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00507 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.01087 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.24393 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M g4A =	522.21231 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	78.79391 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00868 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	9.29514 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	- (mg/s)
	mass flux of ground water into SW-005	M g5 =	856.33253 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	177.30233 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	441.36963 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl =	27.59250 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M r1 =	203.7430 (mg/s)
	mass flux in river at SW-002	M r2 =	320.4566 (mg/s)
	mass flux in river at SW-003	M r3 =	360.6417 (mg/s)
	mass flux in river at SW-004	M r4 =	490.2756 (mg/s)
	mass flux in river at SW-004A	M r4A =	1,100.5857 (mg/s)
	mass flux in river at SW-005	M r5 =	1,956.9182 (mg/s)
	mass flux in river at USGS Gage	M r6 =	2,134.2205 (mg/s)
mass flux into Colby Lake	M cl =	2,603.1827 (mg/s)	
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C r1 =	6.10119 (mg/L)
	concentration in river at SW-002	C r2 =	7.60282 (mg/L)
	concentration in river at SW-003	C r3 =	7.99416 (mg/L)
	concentration in river at SW-004	C r4 =	8.66571 (mg/L)
	concentration in river at SW-004A	C r4A =	11.31777 (mg/L)
	concentration in river at SW-005	C r5 =	12.11826 (mg/L)
	concentration in river at USGS Gage	C r6 =	12.21047 (mg/L)
	concentration in Colby Lake (H)	C cl =	3.86967 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 10 Nickel		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0016 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0016 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0016 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0016 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0016 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0016 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0016 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0016 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0033 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0016 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0163 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0163 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0163 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0163 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0163 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0163 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0163 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0163 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.2500 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.8600 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.8600 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.8600 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	67.0481 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0080 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.0190 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.2500 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.8600 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.8600 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.8600 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	67.0481 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0080 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0163 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0163 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0163 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	3.4148 (mg/L)
			Low Flow
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	(mg/s)
	mass flux of ground water into SW-001	M g1 =	0.08293 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.04387 (mg/s)
	mass flux of surface water into SW-002	M s2 =	(mg/s)
	mass flux of ground water into SW-002	M g2 =	0.14254 (mg/s)
	mass flux of surface water into SW-003	M s3 =	(mg/s)
	mass flux of ground water into SW-003	M g3 =	0.04823 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.00081 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00007 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	(mg/s)
	mass flux of ground water into SW-004	M g4 =	0.14263 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00007 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00013 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00882 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.01725 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00009 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.00426 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00001 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00001 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00495 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.63778 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	0.04975 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	0.02456 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	- (mg/s)
	mass flux of ground water into SW-005	M g5 =	1.04584 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.21654 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	- (mg/s)
mass flux of ground water into Colby Lake	M gcl =	0.53905 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.03642 (mg/s)	
			Low Flow
Mass balance at each node	mass flux in river at SW-001	M r1 =	0.1268 (mg/s)
	mass flux in river at SW-002	M r2 =	0.2693 (mg/s)
	mass flux in river at SW-003	M r3 =	0.3184 (mg/s)
	mass flux in river at SW-004	M r4 =	0.4967 (mg/s)
	mass flux in river at SW-004A	M r4A =	1.2088 (mg/s)
	mass flux in river at SW-005	M r5 =	2.2546 (mg/s)
	mass flux in river at USGS Gage	M r6 =	2.4712 (mg/s)
	mass flux into Colby Lake	M cl =	3.0466 (mg/s)
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C r1 =	0.00380 (mg/L)
	concentration in river at SW-002	C r2 =	0.00639 (mg/L)
	concentration in river at SW-003	C r3 =	0.00706 (mg/L)
	concentration in river at SW-004	C r4 =	0.00878 (mg/L)
	concentration in river at SW-004A	C r4A =	0.01243 (mg/L)
	concentration in river at SW-005	C r5 =	0.01396 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.01414 (mg/L)
concentration in Colby Lake (H)	C cl =	0.00336 (mg/L)	

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 10 Lead			
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0005	(mg/L)
	concentration of surface water into SW-002	C s2 =	0.0005	(mg/L)
	concentration of surface water into SW-003	C s3 =	0.0005	(mg/L)
	concentration of surface water into SW-004	C s4 =	0.0005	(mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0005	(mg/L)
	concentration of surface water into SW-005	C s5 =	0.0005	(mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0005	(mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0005	(mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0005	(mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0002	(mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A	(mg/L)
	concentration of ground water into SW-001	C g1 =	0.0011	(mg/L)
	concentration of ground water into SW-002	C g2 =	0.0011	(mg/L)
	concentration of ground water into SW-003	C g3 =	0.0011	(mg/L)
	concentration of ground water into SW-004	C g4 =	0.0011	(mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0011	(mg/L)
	concentration of ground water into SW-005	C g5 =	0.0011	(mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0011	(mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0011	(mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A	(mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A	(mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.0299	(mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.0414	(mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0481	(mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0528	(mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.0528	(mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0007	(mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	-	(mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.0299	(mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.0414	(mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.0481	(mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0528	(mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0528	(mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0007	(mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A	(mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0011	(mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0011	(mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0011	(mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0148	(mg/L)
Convert concentration to mass flux	Low Flow			
	mass flux of surface water into SW-001	M s1 =	-	(mg/s)
	mass flux of ground water into SW-001	M g1 =	0.00571	(mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.00425	(mg/s)
	mass flux of surface water into SW-002	M s2 =	-	(mg/s)
	mass flux of ground water into SW-002	M g2 =	0.00981	(mg/s)
	mass flux of surface water into SW-003	M s3 =	-	(mg/s)
	mass flux of ground water into SW-003	M g3 =	0.00332	(mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A	(mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.00004	(mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00000	(mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00000	(mg/s)
	mass flux of surface water into SW-004	M s4 =	-	(mg/s)
	mass flux of ground water into SW-004	M g4 =	0.00981	(mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A	(mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A	(mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	-	(mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00000	(mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00001	(mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00001	(mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.00146	(mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000	(mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000	(mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000	(mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.00036	(mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00000	(mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00000	(mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000	(mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00002	(mg/s)
	mass flux of surface water into SW-004A	M s4A =	-	(mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.04388	(mg/s)
	mass flux of West Pit overflow	M sms =	#N/A	(mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.00596	(mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000	(mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	-	(mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A	(mg/s)
	mass flux of surface water into SW-005	M s5 =	-	(mg/s)
	mass flux of ground water into SW-005	M g5 =	0.07195	(mg/s)
	mass flux of surface water into USGS Gage	M s6 =	-	(mg/s)
mass flux of ground water into USGS Gage	M g6 =	0.01490	(mg/s)	
mass flux of surface water into Colby Lake	M scl =	-	(mg/s)	
mass flux of ground water into Colby Lake	M gcl =	0.03708	(mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00552	(mg/s)	
Mass balance at each node	Low Flow			
	mass flux in river at SW-001	M r1 =	0.0100	(mg/s)
	mass flux in river at SW-002	M r2 =	0.0198	(mg/s)
	mass flux in river at SW-003	M r3 =	0.0231	(mg/s)
	mass flux in river at SW-004	M r4 =	0.0348	(mg/s)
	mass flux in river at SW-004A	M r4A =	0.0846	(mg/s)
	mass flux in river at SW-005	M r5 =	0.1566	(mg/s)
	mass flux in river at USGS Gage	M r6 =	0.1715	(mg/s)
Convert mass flux to concentration	Low Flow			
	concentration in river at SW-001	C r1 =	0.00030	(mg/L)
	concentration in river at SW-002	C r2 =	0.00047	(mg/L)
	concentration in river at SW-003	C r3 =	0.00051	(mg/L)
	concentration in river at SW-004	C r4 =	0.00061	(mg/L)
	concentration in river at SW-004A	C r4A =	0.00087	(mg/L)
	concentration in river at SW-005	C r5 =	0.00097	(mg/L)
	concentration in river at USGS Gage	C r6 =	0.00098	(mg/L)
	concentration in Colby Lake (H)	C cl =	0.00057	(mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 10 Antimony		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0015 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0015 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0015 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0015 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0015 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0015 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0015 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0015 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0015 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0015 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0015 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0015 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0015 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0015 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0015 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0015 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0015 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0015 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.0800 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.0800 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0800 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0800 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.0390 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0003 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.0004 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.0800 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.0800 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.0800 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0800 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0390 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0003 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0015 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0015 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0015 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	0.0307 (mg/L)
Convert concentration to mass flux			Low Flow
	mass flux of surface water into SW-001	M s1 =	(mg/s)
	mass flux of ground water into SW-001	M g1 =	0.00764 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.04245 (mg/s)
	mass flux of surface water into SW-002	M s2 =	(mg/s)
	mass flux of ground water into SW-002	M g2 =	0.01313 (mg/s)
	mass flux of surface water into SW-003	M s3 =	(mg/s)
	mass flux of ground water into SW-003	M g3 =	0.00444 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.00008 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	(mg/s)
	mass flux of ground water into SW-004	M g4 =	0.01314 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00001 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.00065 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.00016 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00004 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.05876 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	0.01592 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	0.00052 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	- (mg/s)
	mass flux of ground water into SW-005	M g5 =	0.09636 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.01995 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	0.04967 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.01656 (mg/s)
Mass balance at each node			Low Flow
	mass flux in river at SW-001	M r1 =	0.0501 (mg/s)
	mass flux in river at SW-002	M r2 =	0.0632 (mg/s)
	mass flux in river at SW-003	M r3 =	0.0677 (mg/s)
	mass flux in river at SW-004	M r4 =	0.0818 (mg/s)
	mass flux in river at SW-004A	M r4A =	0.1570 (mg/s)
	mass flux in river at SW-005	M r5 =	0.2533 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M r6 =	0.2733 (mg/s)
	mass flux into Colby Lake	M cl =	0.3395 (mg/s)
			Low Flow
	concentration in river at SW-001	C r1 =	0.00150 (mg/L)
	concentration in river at SW-002	C r2 =	0.00150 (mg/L)
	concentration in river at SW-003	C r3 =	0.00150 (mg/L)
	concentration in river at SW-004	C r4 =	0.00145 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00161 (mg/L)
	concentration in river at SW-005	C r5 =	0.00157 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00156 (mg/L)
	concentration in Colby Lake (H)	C cl =	0.00151 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 10 Selenium		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0005 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0005 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0005 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0005 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0005 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0005 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0005 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0005 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0005 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0005 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0019 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0019 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0019 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0019 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0019 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0019 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0019 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0019 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.0029 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.0029 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0029 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0029 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.0029 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0004 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.0019 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.0029 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.0029 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.0029 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0029 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0029 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0004 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0019 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0019 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0019 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0023 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	(mg/s)
	mass flux of ground water into SW-001	M g1 =	0.00973 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.01415 (mg/s)
	mass flux of surface water into SW-002	M s2 =	(mg/s)
	mass flux of ground water into SW-002	M g2 =	0.01672 (mg/s)
	mass flux of surface water into SW-003	M s3 =	(mg/s)
	mass flux of ground water into SW-003	M g3 =	0.00566 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	(mg/s)
	mass flux of ground water into SW-004	M g4 =	0.01673 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.00096 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.00024 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00000 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.07483 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	0.00058 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	0.00246 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	- (mg/s)
	mass flux of ground water into SW-005	M g5 =	0.12270 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.02540 (mg/s)
mass flux of surface water into Colby Lake	M scl =	- (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	0.06324 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.00552 (mg/s)	
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M r1 =	0.0239 (mg/s)
	mass flux in river at SW-002	M r2 =	0.0406 (mg/s)
	mass flux in river at SW-003	M r3 =	0.0463 (mg/s)
	mass flux in river at SW-004	M r4 =	0.0642 (mg/s)
	mass flux in river at SW-004A	M r4A =	0.1421 (mg/s)
	mass flux in river at SW-005	M r5 =	0.2648 (mg/s)
	mass flux in river at USGS Gage	M r6 =	0.2902 (mg/s)
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C r1 =	0.00072 (mg/L)
	concentration in river at SW-002	C r2 =	0.00096 (mg/L)
	concentration in river at SW-003	C r3 =	0.00103 (mg/L)
	concentration in river at SW-004	C r4 =	0.00113 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00146 (mg/L)
	concentration in river at SW-005	C r5 =	0.00164 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00166 (mg/L)
	concentration in Colby Lake (H)	C cl =	0.00067 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 10 Sulfate		
Input concentration data	concentration of surface water into SW-001	C s1 =	9.0000 (mg/L)
	concentration of surface water into SW-002	C s2 =	9.0000 (mg/L)
	concentration of surface water into SW-003	C s3 =	9.0000 (mg/L)
	concentration of surface water into SW-004	C s4 =	9.0000 (mg/L)
	concentration of surface water into SW-004A	C s4A =	9.0000 (mg/L)
	concentration of surface water into SW-005	C s5 =	9.0000 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	9.0000 (mg/L)
	concentration of surface water into Colby Lake	C scl =	9.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	9.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	22.0000 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	16.1300 (mg/L)
	concentration of ground water into SW-002	C g2 =	16.1300 (mg/L)
	concentration of ground water into SW-003	C g3 =	16.1300 (mg/L)
	concentration of ground water into SW-004	C g4 =	16.1300 (mg/L)
	concentration of ground water into SW-004A	C g4A =	16.1300 (mg/L)
	concentration of ground water into SW-005	C g5 =	16.1300 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	16.1300 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	16.1300 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	968.1517 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	2,340.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	2,340.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	2,340.0000 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	8,277.8283 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	35.1700 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	68.3000 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	968.1517 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	2,340.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	2,340.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	2,340.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	8,277.8283 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	35.1700 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	16.1300 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	16.1300 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	16.1300 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	902.4217 (mg/L)
Convert concentration to mass flux			Low Flow
	mass flux of surface water into SW-001	M s1 =	(mg/s)
	mass flux of ground water into SW-001	M g1 =	82.16622 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	622.60000 (mg/s)
	mass flux of surface water into SW-002	M s2 =	(mg/s)
	mass flux of ground water into SW-002	M g2 =	141.22956 (mg/s)
	mass flux of surface water into SW-003	M s3 =	(mg/s)
	mass flux of ground water into SW-003	M g3 =	47.78402 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep 003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3 003 =	2.19593 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO 003 =	0.19321 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s 003 =	0.00189 (mg/s)
	mass flux of surface water into SW-004	M s4 =	(mg/s)
	mass flux of ground water into SW-004	M g4 =	141.31626 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep 004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3 004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO 004 =	0.19321 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.35752 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	1.08908 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	76.11262 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs 004 =	0.00180 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00164 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.01103 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	18.81988 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00614 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.01315 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	1.30944 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M g4A =	631.90432 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	192.66850 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.02121 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	88.29738 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	- (mg/s)
	mass flux of ground water into SW-005	M g5 =	1,036.20733 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	214.54513 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	534.08043 (mg/s)
mass flux of surface water from Hoyt Lakes WWTP	M shl =	99.33300 (mg/s)	
Mass balance at each node			Low Flow
	mass flux in river at SW-001	M r1 =	704.7662 (mg/s)
	mass flux in river at SW-002	M r2 =	845.9958 (mg/s)
	mass flux in river at SW-003	M r3 =	896.1708 (mg/s)
	mass flux in river at SW-004	M r4 =	1,135.4045 (mg/s)
	mass flux in river at SW-004A	M r4A =	2,048.2959 (mg/s)
	mass flux in river at SW-005	M r5 =	3,084.5032 (mg/s)
	mass flux in river at USGS Gage	M r6 =	3,299.0483 (mg/s)
	mass flux into Colby Lake	M cl =	9,332.4618 (mg/s)
Convert mass flux to concentration			Low Flow
	concentration in river at SW-001	C r1 =	21.10458 (mg/L)
	concentration in river at SW-002	C r2 =	20.07121 (mg/L)
	concentration in river at SW-003	C r3 =	19.86495 (mg/L)
	concentration in river at SW-004	C r4 =	20.06848 (mg/L)
	concentration in river at SW-004A	C r4A =	21.06346 (mg/L)
	concentration in river at SW-005	C r5 =	19.10086 (mg/L)
	concentration in river at USGS Gage	C r6 =	18.87478 (mg/L)
	concentration in Colby Lake (H	C cl =	10.31488 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 10 Thallium		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0004 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0004 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0004 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0004 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0004 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0004 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0004 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0004 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0004 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0003 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0000 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0000 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0000 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0000 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0000 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0000 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0000 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0000 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0000 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.0001 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0000 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0001 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0000 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0000 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0000 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0000 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0011 (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M s1 =	- (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.00002 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.00809 (mg/s)
	mass flux of surface water into SW-002	M s2 =	- (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.00004 (mg/s)
	mass flux of surface water into SW-003	M s3 =	- (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.00001 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	- (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.00004 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.00009 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.00002 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00000 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.00016 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	- (mg/s)
	mass flux of ground water into SW-005	M g5 =	0.00026 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	- (mg/s)
mass flux of ground water into USGS Gage	M g6 =	0.00005 (mg/s)	
mass flux of surface water into Colby Lake	M scl =	- (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	0.00013 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.00441 (mg/s)	
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M r1 =	0.0081 (mg/s)
	mass flux in river at SW-002	M r2 =	0.0081 (mg/s)
	mass flux in river at SW-003	M r3 =	0.0082 (mg/s)
	mass flux in river at SW-004	M r4 =	0.0083 (mg/s)
	mass flux in river at SW-004A	M r4A =	0.0085 (mg/s)
	mass flux in river at SW-005	M r5 =	0.0087 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M r6 =	0.0088 (mg/s)
	mass flux into Colby Lake	M cl =	0.0133 (mg/s)
	Low Flow		
	concentration in river at SW-001	C r1 =	0.00024 (mg/L)
	concentration in river at SW-002	C r2 =	0.00019 (mg/L)
	concentration in river at SW-003	C r3 =	0.00018 (mg/L)
	concentration in river at SW-004	C r4 =	0.00015 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00009 (mg/L)
	concentration in river at SW-005	C r5 =	0.00005 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00005 (mg/L)
	concentration in Colby Lake (H)	C cl =	0.00035 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case		Year 10	
Parameter		Vanadium	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0009 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0009 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0009 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0009 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0009 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0009 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0009 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0009 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0009 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0043 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0043 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0043 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0043 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0043 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0043 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0043 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0043 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0043 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.1492 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	2.0133 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	2.3375 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.2665 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0199 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0017 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.0014 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.1492 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	2.0133 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	2.3375 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.2665 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0199 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0017 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0043 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0043 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0043 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.2651 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.02190 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.12169 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.03765 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.01274 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00189 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00019 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.03767 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00019 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00004 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00374 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00093 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00038 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.16846 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.02970 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.00181 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.27624 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.05719 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.14238 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00993 (mg/s)
Mass balance at each node	mass flux in river at SW-001	M_r1 =	0.1436 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.1812 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.1961 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.2390 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.4390 (mg/s)
	mass flux in river at SW-005	M_r5 =	0.7152 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	0.7724 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	0.9247 (mg/s)
	concentration in river at SW-001	C_r1 =	0.00430 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00430 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00435 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00423 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00451 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00443 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00442 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.00138 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 10 Zinc		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0160 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0160 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0160 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0160 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0160 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0160 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0160 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0160 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0620 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0073 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0275 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0275 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0275 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0275 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0275 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0275 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0275 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0275 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.0900 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.0900 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0900 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0900 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	26.0000 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0046 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.0030 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.0900 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.0900 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.0900 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0900 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	26.0000 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0046 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0275 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0275 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0275 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	1.2883 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	(mg/s)
	mass flux of ground water into SW-001	M g1 =	0.14009 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.20744 (mg/s)
	mass flux of surface water into SW-002	M s2 =	(mg/s)
	mass flux of ground water into SW-002	M g2 =	0.24078 (mg/s)
	mass flux of surface water into SW-003	M s3 =	(mg/s)
	mass flux of ground water into SW-003	M g3 =	0.08147 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.00008 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	(mg/s)
	mass flux of ground water into SW-004	M g4 =	0.24093 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00001 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00342 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.00987 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00003 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.00244 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00001 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00002 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00187 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M g4A =	1.07733 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	0.01791 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	0.00388 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	- (mg/s)
	mass flux of ground water into SW-005	M g5 =	1.76663 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.36578 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	0.91055 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.68429 (mg/s)
Mass balance at each node			Low Flow
	mass flux in river at SW-001	M r1 =	0.3475 (mg/s)
	mass flux in river at SW-002	M r2 =	0.5883 (mg/s)
	mass flux in river at SW-003	M r3 =	0.6699 (mg/s)
	mass flux in river at SW-004	M r4 =	0.9285 (mg/s)
	mass flux in river at SW-004A	M r4A =	2.0276 (mg/s)
	mass flux in river at SW-005	M r5 =	3.7942 (mg/s)
	mass flux in river at USGS Gage	M r6 =	4.1600 (mg/s)
mass flux into Colby Lake	M cl =	5.7549 (mg/s)	
Convert mass flux to concentration			Low Flow
	concentration in river at SW-001	C r1 =	0.01041 (mg/L)
	concentration in river at SW-002	C r2 =	0.01396 (mg/L)
	concentration in river at SW-003	C r3 =	0.01485 (mg/L)
	concentration in river at SW-004	C r4 =	0.01641 (mg/L)
	concentration in river at SW-004A	C r4A =	0.02085 (mg/L)
	concentration in river at SW-005	C r5 =	0.02350 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.02380 (mg/L)
concentration in Colby Lake (H	C cl =	0.01750 (mg/L)	

## Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

### FLOWS

Case Flow	Year 10 Average Flow Conditions (mean annual)		
Total flow in Partridge River	flow in river at SW-001	Q_r1_M =	5.70 (cfs)
	flow in river at SW-002	Q_r2_M =	11.27 (cfs)
	flow in river at SW-003	Q_r3_M =	12.92 (cfs)
	flow in river at SW-004	Q_r4_M =	19.11 (cfs)
	flow in river at SW-004A	Q_r4a_M =	43.81 (cfs)
	flow in river at SW-005	Q_r5_M =	82.19 (cfs)
	flow in river at USGS Gage	Q_r6_M =	86.54 (cfs)
	total flow into Colby Lake	Q_cl_M =	111.66 (cfs)
	flow check	Q_ck_M =	111.66 (cfs)
input flow data	surface water flow into SW-001	Q_s1_M =	4.52 (cfs)
	surface water flow into SW-002	Q_s2_M =	5.26 (cfs)
	surface water flow into SW-003	Q_s3_M =	1.54 (cfs)
	surface water flow into SW-004	Q_s4_M =	5.79 (cfs)
	surface water flow into SW-004A	Q_s4a_M =	23.24 (cfs)
	surface water flow into SW-005	Q_s5_M =	36.12 (cfs)
	surface water flow into USGS Gage	Q_s6_M =	3.88 (cfs)
	surface water flow into Colby Lake	Q_scl_M =	23.56 (cfs)
	surface water inflow from Hoyt Lakes WWTP	Q_shl_M =	0.39 (cfs)
	surface water inflow from discharges upstream of PM-1	Q_sns_M =	1.00 (cfs)
	surface water flow from West Pit overflow	Q_sms_M =	- (cfs)
	ground water flow into SW-001	Q_g1_M =	0.18 (cfs)
	ground water flow into SW-002	Q_g2_M =	0.31 (cfs)
	ground water flow into SW-003	Q_g3_M =	0.10 (cfs)
	ground water flow into SW-004	Q_g4_M =	0.31 (cfs)
	ground water flow into SW-004A	Q_g4a_M =	1.38 (cfs)
	ground water flow into SW-005	Q_g5_M =	2.27 (cfs)
	ground water flow into USGS Gage	Q_g6_M =	0.47 (cfs)
	ground water flow into Colby Lake	Q_gcl_M =	1.17 (cfs)
	ground water seepage from East Pit to SW-003	Q_gep_003_M =	- (cfs)
	ground water seepage from East Pit to SW-004	Q_gep_004_M =	- (cfs)
	ground water seepage from West Pit	Q_gwp_M =	- (cfs)
	ground water liner leakage from Cat 1 stockpile	Q_gC12_M =	0.0087 (cfs)
	ground water liner leakage from Cat 2/3 stockpile to SW-003	Q_gC3_003_M =	0.0001 (cfs)
	ground water liner leakage from Cat 2/3 stockpile to SW-004	Q_gC3_004_M =	- (cfs)
	ground water liner leakage from Cat 3LO stockpile to SW-003	Q_gC3LO_003_M =	0.0000 (cfs)
	ground water liner leakage from Cat 3LO stockpile to SW-004	Q_gC3LO_004_M =	0.0000 (cfs)
	ground water liner leakage from Cat 4 stockpile	Q_gC4_M =	0.0000 (cfs)
	ground water liner leakage from LO SP	Q_gC4LO_M =	0.0000 (cfs)
	ground water seepage from Overburden Storage	Q_gOS_M =	0.0765 (cfs)
	ground water seepage from Overburden (Cat 1)	Q_gO12_M =	0.0628 (cfs)
	ground water liner leakage from Cat 1 sumps	Q_gC12s_M =	0.0000 (cfs)
	ground water liner leakage from Cat 2/3 sumps	Q_gC3s_M =	0.0000 (cfs)
	ground water liner leakage from Cat 3LO sumps	Q_gC3LOs_M =	0.0000 (cfs)
	ground water liner leakage from Cat 4 sumps	Q_gC4s_M =	0.0000 (cfs)
	ground water liner leakage from LO SP sumps	Q_gC4LOs_M =	0.0000 (cfs)
	ground water seepage from Overburden pond - PW1	Q_gOp1_M =	0.0189 (cfs)
	ground water seepage from Overburden pond - PW7	Q_gOp7_M =	- (cfs)
	ground water leakage from Haul Road pond - PW2	Q_gHRp2_M =	0.0000 (cfs)
	ground water leakage from Haul Road pond - PW4	Q_gHRp4_M =	0.0000 (cfs)
	ground water leakage from RTH pond - PW3	Q_gRTHp_M =	0.0000 (cfs)
	ground water liner leakage from WWTF pond	Q_gWTFp_M =	0.000051 (cfs)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 10 Silver		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0001 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0001 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0001 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0001 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0001 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0001 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0001 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0001 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0001 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0001 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0006 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0006 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0006 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0006 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0006 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0006 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0006 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0006 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.0007 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.0007 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0007 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0007 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.0007 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	- (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.0007 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.0007 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.0007 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0007 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0007 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	- (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0006 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0006 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0006 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0008 (mg/L)
Convert concentration to mass flux	Average Flow		
	mass flux of surface water into SW-001	M s1 =	0.01279 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.00280 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.00340 (mg/s)
	mass flux of surface water into SW-002	M s2 =	0.01490 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.00482 (mg/s)
	mass flux of surface water into SW-003	M s3 =	0.00435 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.00163 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	0.01638 (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.00482 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	- (mg/s)
mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)	
mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)	
mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)	
mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	- (mg/s)	
mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00000 (mg/s)	
mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00000 (mg/s)	
mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)	
mass flux of liner leakage from WWTF pond	M gWTFp =	0.00000 (mg/s)	
mass flux of surface water into SW-004A	M s4A =	0.06577 (mg/s)	
mass flux of ground water into SW-004A	M g4A =	0.02155 (mg/s)	
mass flux of West Pit overflow	M sms =	#N/A (mg/s)	
mass flux of liner leakage from Cat 1 stockpile	M gC12 =	0.00017 (mg/s)	
mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00000 (mg/s)	
mass flux of seepage from Overburden (Cat 1)	M gO12 =	- (mg/s)	
mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)	
mass flux of surface water into SW-005	M s5 =	0.10221 (mg/s)	
mass flux of ground water into SW-005	M g5 =	0.03533 (mg/s)	
mass flux of surface water into USGS Gage	M s6 =	0.01098 (mg/s)	
mass flux of ground water into USGS Gage	M g6 =	0.00732 (mg/s)	
mass flux of surface water into Colby Lake	M scl =	0.06667 (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	0.01821 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.00110 (mg/s)	
Mass balance at each node	Average Flow		
	mass flux in river at SW-001	M r1 =	0.0190 (mg/s)
	mass flux in river at SW-002	M r2 =	0.0387 (mg/s)
	mass flux in river at SW-003	M r3 =	0.0447 (mg/s)
	mass flux in river at SW-004	M r4 =	0.0659 (mg/s)
	mass flux in river at SW-004A	M r4A =	0.1534 (mg/s)
	mass flux in river at SW-005	M r5 =	0.2909 (mg/s)
	mass flux in river at USGS Gage	M r6 =	0.3092 (mg/s)
mass flux into Colby Lake	M cl =	0.3952 (mg/s)	
Convert mass flux to concentration	Average Flow		
	concentration in river at SW-001	C r1 =	0.00012 (mg/L)
	concentration in river at SW-002	C r2 =	0.00012 (mg/L)
	concentration in river at SW-003	C r3 =	0.00012 (mg/L)
	concentration in river at SW-004	C r4 =	0.00012 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00012 (mg/L)
	concentration in river at SW-005	C r5 =	0.00013 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00013 (mg/L)
	concentration in Colby Lake	C cl =	0.00013 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case		Year 10	
Parameter	Aluminum		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0700 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0700 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0700 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0700 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0700 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0700 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0700 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0700 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0700 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0173 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.1250 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.1250 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.1250 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.1250 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.1250 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.1250 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.1250 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.1250 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	1.6800 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	1.6800 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	1.6800 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	1.6800 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	54.2873 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.4106 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.1400 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	1.6800 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	1.6800 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	1.6800 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	1.6800 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	54.2873 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.4106 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.1250 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.1250 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.1250 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	4.4167 (mg/L)
Convert concentration to mass flux	Average Flow		
	mass flux of surface water into SW-001	M_s1 =	8.95493 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.63675 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.48959 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	10.42682 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	1.09446 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	3.04752 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.37030 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00259 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00023 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	11.46411 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	1.09514 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00023 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00042 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.01168 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.88859 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00007 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.21972 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00005 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00010 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00641 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	46.04040 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	4.89696 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.41365 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00004 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.24865 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	71.54896 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	8.03013 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	7.68612 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	1.66263 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	46.67236 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	4.13888 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.77259 (mg/s)
Mass balance at each node	Average Flow		
	mass flux in river at SW-001	M_r1 =	10.0813 (mg/s)
	mass flux in river at SW-002	M_r2 =	21.6026 (mg/s)
	mass flux in river at SW-003	M_r3 =	25.0232 (mg/s)
	mass flux in river at SW-004	M_r4 =	38.7097 (mg/s)
	mass flux in river at SW-004A	M_r4A =	90.3094 (mg/s)
	mass flux in river at SW-005	M_r5 =	169.8855 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	179.2372 (mg/s)
Convert mass flux to concentration	Average Flow		
	concentration in river at SW-001	C_r1 =	0.06249 (mg/L)
	concentration in river at SW-002	C_r2 =	0.06771 (mg/L)
	concentration in river at SW-003	C_r3 =	0.06846 (mg/L)
	concentration in river at SW-004	C_r4 =	0.07158 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.07285 (mg/L)
	concentration in river at SW-005	C_r5 =	0.07304 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.07318 (mg/L)
	concentration in Colby Lake	C_cl =	0.07304 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case		Year 10	
Parameter		Arsenic	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0021 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0021 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0021 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0021 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0021 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0021 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0021 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0021 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0021 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0065 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0022 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0022 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0022 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0022 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0022 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0022 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0022 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0022 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.1328 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.7100 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.7100 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.7100 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0542 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0016 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.0027 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.1328 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.7100 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.7100 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.7100 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0542 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0016 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0022 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0022 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0022 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.1549 (mg/L)
		Average Flow	
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	0.26993 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.01100 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.18395 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	0.31429 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.01891 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.09186 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00640 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00110 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00010 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.34556 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.01892 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00010 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00018 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00338 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00083 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00022 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	1.38779 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.08462 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.03269 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.00480 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	2.15669 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.13876 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.23168 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.02873 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	1.40684 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.07152 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.02329 (mg/s)
		Average Flow	
Mass balance at each node	mass flux in river at SW-001	M_r1 =	0.4649 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.7981 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.8975 (mg/s)
	mass flux in river at SW-004	M_r4 =	1.2667 (mg/s)
	mass flux in river at SW-004A	M_r4A =	2.7766 (mg/s)
	mass flux in river at SW-005	M_r5 =	5.0721 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	5.3325 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	6.8342 (mg/s)
	concentration in river at SW-001	C_r1 =	0.00288 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00250 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00246 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00234 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00224 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00218 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00218 (mg/L)
	concentration in Colby Lake	C_cl =	0.00216 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case	Year 10		
Parameter	Boron		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0450 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0450 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0450 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0450 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0450 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0450 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0450 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0450 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0450 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0960 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0870 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0870 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0870 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0870 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0870 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0870 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0870 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0870 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.4971 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.7600 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.7600 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.7600 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.7600 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0622 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.0370 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.4971 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.7600 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.7600 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.7600 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.7600 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0622 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0870 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0870 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0870 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.3191 (mg/L)
			Average Flow
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	5.75674 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.44318 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	2.71680 (mg/s)
	mass flux of surface water into SW-002	M s2 =	6.70296 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.76175 (mg/s)
	mass flux of surface water into SW-003	M s3 =	1.95912 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.25773 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.00117 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00010 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	7.36978 (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.76221 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00010 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00019 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00016 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.13461 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.03328 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00003 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00007 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00046 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	29.59740 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	3.40829 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	0.12239 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	0.06572 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	45.99576 (mg/s)
	mass flux of ground water into SW-005	M g5 =	5.58897 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	4.94107 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	1.15719 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	30.00366 (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	2.88066 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.49667 (mg/s)
			Average Flow
Mass balance at each node	mass flux in river at SW-001	M r1 =	8.9167 (mg/s)
	mass flux in river at SW-002	M r2 =	16.3814 (mg/s)
	mass flux in river at SW-003	M r3 =	18.5995 (mg/s)
	mass flux in river at SW-004	M r4 =	26.5005 (mg/s)
	mass flux in river at SW-004A	M r4A =	60.0943 (mg/s)
	mass flux in river at SW-005	M r5 =	111.6790 (mg/s)
	mass flux in river at USGS Gage	M r6 =	117.7773 (mg/s)
	mass flux into Colby Lake	M cl =	151.1582 (mg/s)
			Average Flow
Convert mass flux to concentration	concentration in river at SW-001	C r1 =	0.05527 (mg/L)
	concentration in river at SW-002	C r2 =	0.05135 (mg/L)
	concentration in river at SW-003	C r3 =	0.05088 (mg/L)
	concentration in river at SW-004	C r4 =	0.04974 (mg/L)
	concentration in river at SW-004A	C r4A =	0.04848 (mg/L)
	concentration in river at SW-005	C r5 =	0.04801 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.04809 (mg/L)
	concentration in Colby Lake	C cl =	0.04783 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 10 Barium		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0077 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0077 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0077 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0077 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0077 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0077 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0077 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0077 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0077 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0050 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0219 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0219 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0219 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0219 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0219 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0219 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0219 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0219 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.1900 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.1900 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.1900 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.1900 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.1900 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0168 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.0140 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.1900 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.1900 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.1900 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.1900 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.1900 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0168 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0219 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0219 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0219 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0792 (mg/L)
Convert concentration to mass flux	Average Flow		
	mass flux of surface water into SW-001	M s1 =	0.98248 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.11166 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.14150 (mg/s)
	mass flux of surface water into SW-002	M s2 =	1.14397 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.19193 (mg/s)
	mass flux of surface water into SW-003	M s3 =	0.33436 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.06494 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.00029 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00003 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	1.25778 (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.19204 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00003 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00005 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00004 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.03643 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.00901 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00001 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00002 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00011 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	5.05129 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.85873 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	0.04678 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	0.02487 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	7.84994 (mg/s)
	mass flux of ground water into SW-005	M g5 =	1.40816 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	0.84328 (mg/s)
mass flux of ground water into USGS Gage	M g6 =	0.29156 (mg/s)	
mass flux of surface water into Colby Lake	M scl =	5.12062 (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	0.72579 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.08476 (mg/s)	
Mass balance at each node	Average Flow		
	mass flux in river at SW-001	M r1 =	1.2356 (mg/s)
	mass flux in river at SW-002	M r2 =	2.5715 (mg/s)
	mass flux in river at SW-003	M r3 =	2.9712 (mg/s)
	mass flux in river at SW-004	M r4 =	4.4667 (mg/s)
	mass flux in river at SW-004A	M r4A =	10.4483 (mg/s)
	mass flux in river at SW-005	M r5 =	19.7064 (mg/s)
	mass flux in river at USGS Gage	M r6 =	20.8413 (mg/s)
	mass flux into Colby Lake	M cl =	26.7725 (mg/s)
Convert mass flux to concentration	Average Flow		
	concentration in river at SW-001	C r1 =	0.00766 (mg/L)
	concentration in river at SW-002	C r2 =	0.00806 (mg/L)
	concentration in river at SW-003	C r3 =	0.00813 (mg/L)
	concentration in river at SW-004	C r4 =	0.00826 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00843 (mg/L)
	concentration in river at SW-005	C r5 =	0.00847 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00851 (mg/L)
	concentration in Colby Lake	C cl =	0.00847 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case		Year 10	
Parameter		Beryllium	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0001 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0001 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0001 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0001 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0001 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0001 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0001 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0001 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0001 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0001 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0001 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0001 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0001 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0001 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0001 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0001 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0001 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0001 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0002 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0002 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0023 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	- (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0002 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0002 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0023 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	- (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0001 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0001 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0001 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0004 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	0.01279 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00074 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.00283 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	0.01490 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.00127 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.00435 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00043 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.01638 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.00127 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	- (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00000 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	0.06577 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.00568 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.00005 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	0.10221 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.00931 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.01098 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.00193 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	0.06667 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.00480 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00110 (mg/s)
Mass balance at each node			Average Flow
	mass flux in river at SW-001	M_r1 =	0.0164 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.0325 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.0373 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.0550 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.1265 (mg/s)
	mass flux in river at SW-005	M_r5 =	0.2380 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	0.2509 (mg/s)
Convert mass flux to concentration			Average Flow
	concentration in river at SW-001	C_r1 =	0.00010 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00010 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00010 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00010 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00010 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00010 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00010 (mg/L)
	concentration in Colby Lake	C_cl =	0.00010 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 10 Calcium		
Input concentration data	concentration of surface water into SW-001	C s1 =	17.0000 (mg/L)
	concentration of surface water into SW-002	C s2 =	17.0000 (mg/L)
	concentration of surface water into SW-003	C s3 =	17.0000 (mg/L)
	concentration of surface water into SW-004	C s4 =	17.0000 (mg/L)
	concentration of surface water into SW-004A	C s4A =	17.0000 (mg/L)
	concentration of surface water into SW-005	C s5 =	17.0000 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	17.0000 (mg/L)
	concentration of surface water into Colby Lake	C scl =	17.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	17.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	24.5000 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	14.7900 (mg/L)
	concentration of ground water into SW-002	C g2 =	14.7900 (mg/L)
	concentration of ground water into SW-003	C g3 =	14.7900 (mg/L)
	concentration of ground water into SW-004	C g4 =	14.7900 (mg/L)
	concentration of ground water into SW-004A	C g4A =	14.7900 (mg/L)
	concentration of ground water into SW-005	C g5 =	14.7900 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	14.7900 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	14.7900 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	540.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	540.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	540.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	540.0000 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	247.5644 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	9.3700 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	15.8000 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	540.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	540.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	540.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	540.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	247.5644 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	9.3700 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	14.7900 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	14.7900 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	14.7900 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	194.2595 (mg/L)
Convert concentration to mass flux	Average Flow		
	mass flux of surface water into SW-001	M s1 =	2,174.76906 (mg/s)
	mass flux of ground water into SW-001	M g1 =	75.34026 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	693.35000 (mg/s)
	mass flux of surface water into SW-002	M s2 =	2,532.22851 (mg/s)
	mass flux of ground water into SW-002	M g2 =	129.49691 (mg/s)
	mass flux of surface water into SW-003	M s3 =	740.11097 (mg/s)
	mass flux of ground water into SW-003	M g3 =	43.81436 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.83361 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.07291 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00044 (mg/s)
	mass flux of surface water into SW-004	M s4 =	2,784.13983 (mg/s)
	mass flux of ground water into SW-004	M g4 =	129.57641 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.07291 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.13491 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.05326 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	20.27794 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00042 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00038 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00033 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	5.01400 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00563 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.01206 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.28188 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	11,181.23954 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	579.40885 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	132.95810 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.01183 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	28.06213 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	17,376.17592 (mg/s)
	mass flux of ground water into SW-005	M g5 =	950.12439 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	1,866.62806 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	196.72179 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	11,334.71600 (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	489.71169 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl =	187.62900 (mg/s)
Mass balance at each node	Average Flow		
	mass flux in river at SW-001	M r1 =	2,943.4593 (mg/s)
	mass flux in river at SW-002	M r2 =	5,605.1847 (mg/s)
	mass flux in river at SW-003	M r3 =	6,390.0170 (mg/s)
	mass flux in river at SW-004	M r4 =	9,329.5870 (mg/s)
	mass flux in river at SW-004A	M r4A =	21,251.2674 (mg/s)
	mass flux in river at SW-005	M r5 =	39,577.5677 (mg/s)
	mass flux in river at USGS Gage	M r6 =	41,640.9176 (mg/s)
mass flux into Colby Lake	M cl =	53,652.9743 (mg/s)	
Convert mass flux to concentration	Average Flow		
	concentration in river at SW-001	C r1 =	18.24591 (mg/L)
	concentration in river at SW-002	C r2 =	17.56935 (mg/L)
	concentration in river at SW-003	C r3 =	17.48142 (mg/L)
	concentration in river at SW-004	C r4 =	17.25246 (mg/L)
	concentration in river at SW-004A	C r4A =	17.14245 (mg/L)
	concentration in river at SW-005	C r5 =	17.01489 (mg/L)
	concentration in river at USGS Gage	C r6 =	17.00214 (mg/L)
	concentration in Colby Lake	C cl =	16.97850 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case		Year 10	
Parameter		Cadmium	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0001 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0001 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0001 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0001 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0001 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0001 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0001 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0001 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0001 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0001 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0001 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0001 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0001 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0001 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0001 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0001 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0001 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0001 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0002 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0002 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0149 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0001 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0002 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0002 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0149 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0001 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0001 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0001 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0001 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0010 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	0.01279 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00051 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.00283 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	0.01490 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.00088 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.00435 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00030 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.01638 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.00088 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00013 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00003 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00000 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	0.06577 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.00392 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.00004 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	0.10221 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.00642 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.01098 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.00133 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	0.06667 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.00331 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00110 (mg/s)
Mass balance at each node	Average Flow		
	mass flux in river at SW-001	M_r1 =	0.0161 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.0319 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.0366 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.0540 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.1237 (mg/s)
	mass flux in river at SW-005	M_r5 =	0.2323 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	0.2447 (mg/s)
	mass flux into Colby Lake	M_cl =	0.3157 (mg/s)
	Average Flow		
	concentration in river at SW-001	C_r1 =	0.00010 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00010 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00010 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00010 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00010 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00010 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00010 (mg/L)
	concentration in Colby Lake	C_cl =	0.00010 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case	Year 10		
Parameter	Chloride		
Input concentration data	concentration of surface water into SW-001	C s1 =	8.0000 (mg/L)
	concentration of surface water into SW-002	C s2 =	8.0000 (mg/L)
	concentration of surface water into SW-003	C s3 =	8.0000 (mg/L)
	concentration of surface water into SW-004	C s4 =	8.0000 (mg/L)
	concentration of surface water into SW-004A	C s4A =	8.0000 (mg/L)
	concentration of surface water into SW-005	C s5 =	8.0000 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	8.0000 (mg/L)
	concentration of surface water into Colby Lake	C scl =	8.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	8.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	1.6000 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	6.6000 (mg/L)
	concentration of ground water into SW-002	C g2 =	6.6000 (mg/L)
	concentration of ground water into SW-003	C g3 =	6.6000 (mg/L)
	concentration of ground water into SW-004	C g4 =	6.6000 (mg/L)
	concentration of ground water into SW-004A	C g4A =	6.6000 (mg/L)
	concentration of ground water into SW-005	C g5 =	6.6000 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	6.6000 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	6.6000 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	71.4445 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	48.2729 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	46.0806 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	3.2702 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	1.2896 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	5.3500 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	2.3300 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	71.4445 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	48.2729 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	46.0806 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	3.2702 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	1.2896 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	5.3500 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	6.6000 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	6.6000 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	6.6000 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	30.1422 (mg/L)
		Average Flow	
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	1,023.42074 (mg/s)
	mass flux of ground water into SW-001	M g1 =	33.62040 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	45.28000 (mg/s)
	mass flux of surface water into SW-002	M s2 =	1,191.63695 (mg/s)
	mass flux of ground water into SW-002	M g2 =	57.78767 (mg/s)
	mass flux of surface water into SW-003	M s3 =	348.28752 (mg/s)
	mass flux of ground water into SW-003	M g3 =	19.55205 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.07452 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00622 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00004 (mg/s)
	mass flux of surface water into SW-004	M s4 =	1,310.18345 (mg/s)
	mass flux of ground water into SW-004	M g4 =	57.82314 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00622 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00082 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00028 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	11.57812 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00004 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	2.86285 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00251 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00538 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.04374 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	5,261.75979 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	258.55973 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	17.59097 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00157 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	4.13828 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	8,177.02396 (mg/s)
	mass flux of ground water into SW-005	M g5 =	423.99060 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	878.41321 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	87.78660 (mg/s)
mass flux of surface water into Colby Lake	M scl =	5,333.98400 (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	218.53260 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	88.29600 (mg/s)	
		Average Flow	
Mass balance at each node	mass flux in river at SW-001	M r1 =	1,102.3211 (mg/s)
	mass flux in river at SW-002	M r2 =	2,351.7457 (mg/s)
	mass flux in river at SW-003	M r3 =	2,719.6661 (mg/s)
	mass flux in river at SW-004	M r4 =	4,102.1726 (mg/s)
	mass flux in river at SW-004A	M r4A =	9,644.2230 (mg/s)
	mass flux in river at SW-005	M r5 =	18,245.2375 (mg/s)
	mass flux in river at USGS Gage	M r6 =	19,211.4373 (mg/s)
mass flux into Colby Lake	M cl =	24,852.2499 (mg/s)	
		Average Flow	
Convert mass flux to concentration	concentration in river at SW-001	C r1 =	6.83307 (mg/L)
	concentration in river at SW-002	C r2 =	7.37151 (mg/L)
	concentration in river at SW-003	C r3 =	7.44030 (mg/L)
	concentration in river at SW-004	C r4 =	7.58582 (mg/L)
	concentration in river at SW-004A	C r4A =	7.77957 (mg/L)
	concentration in river at SW-005	C r5 =	7.84385 (mg/L)
	concentration in river at USGS Gage	C r6 =	7.84410 (mg/L)
	concentration in Colby Lake	C cl =	7.86450 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case		Year 10	
Parameter	Cobalt		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0005 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0005 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0005 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0005 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0005 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0005 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0005 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0005 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0005 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0005 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0017 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0017 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0017 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0017 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0017 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0017 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0017 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0017 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0201 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0520 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0520 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0520 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	2.9885 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0011 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.0013 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0201 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0520 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0520 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0520 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	2.9885 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0011 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0017 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0017 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0017 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.2634 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	0.06396 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00841 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.01415 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	0.07448 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.01445 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.02177 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00489 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00008 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.08189 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.01446 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00001 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00064 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00240 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00059 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00038 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	0.32886 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.06464 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.00495 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.00231 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	0.51106 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.10600 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.05490 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.02195 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	0.33337 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.05463 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00552 (mg/s)
Mass balance at each node	Average Flow		
	mass flux in river at SW-001	M_r1 =	0.0865 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.1754 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.2022 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.3026 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.7033 (mg/s)
	mass flux in river at SW-005	M_r5 =	1.3204 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	1.3972 (mg/s)
	mass flux into Colby Lake	M_cl =	1.7908 (mg/s)
	Average Flow		
	concentration in river at SW-001	C_r1 =	0.00054 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00055 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00055 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00056 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00057 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00057 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00057 (mg/L)
	concentration in Colby Lake	C_cl =	0.00057 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 10 Copper		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0017 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0017 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0017 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0017 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0017 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0017 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0017 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0017 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0190 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0012 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0030 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0030 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0030 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0030 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0030 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0030 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0030 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0030 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0920 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0920 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0920 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0920 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.7197 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0214 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.0170 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0920 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0920 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_g3LOs =	0.0920 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0920 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.7197 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0214 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0030 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0030 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0030 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.1703 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	0.21748 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.01503 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.03509 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	0.25322 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.02583 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.07401 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00874 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00014 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.27841 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.02585 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00002 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00015 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.04640 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.01147 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00025 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	1.11812 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.11557 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.02265 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.03019 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	1.73762 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.18951 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.18666 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.03924 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	1.13347 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.09768 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.20970 (mg/s)
Mass balance at each node	mass flux in river at SW-001	M_r1 =	0.2676 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.5466 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.6296 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.9921 (mg/s)
	mass flux in river at SW-004A	M_r4A =	2.2787 (mg/s)
	mass flux in river at SW-005	M_r5 =	4.2058 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	4.4317 (mg/s)
	mass flux into Colby Lake	M_cl =	5.8725 (mg/s)
Convert mass flux to concentration	concentration in river at SW-001	C_r1 =	0.00166 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00171 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00172 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00183 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00184 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00181 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00181 (mg/L)
	concentration in Colby Lake	C_cl =	0.00186 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 10 Fluoride		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0700 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0700 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0700 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0700 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0700 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0700 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0700 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0700 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0700 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.1400 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.2800 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.2800 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.2800 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.2800 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.2800 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.2800 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.2800 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.2800 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.0621 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.0621 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0621 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0621 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.0626 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.2239 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.4200 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.0621 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.0621 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.0621 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0621 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0626 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.2239 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.2800 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.2800 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.2800 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.1917 (mg/L)
Average Flow			
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	8.95493 (mg/s)
	mass flux of ground water into SW-001	M g1 =	1.42632 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	3.96200 (mg/s)
	mass flux of surface water into SW-002	M s2 =	10.42682 (mg/s)
	mass flux of ground water into SW-002	M g2 =	2.45160 (mg/s)
	mass flux of surface water into SW-003	M s3 =	3.04752 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.82948 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.00010 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	11.46411 (mg/s)
	mass flux of ground water into SW-004	M g4 =	2.45310 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00002 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.48453 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.11981 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00011 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00023 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00028 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	46.04040 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	10.96920 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	0.01529 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	0.74596 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	71.54896 (mg/s)
	mass flux of ground water into SW-005	M g5 =	17.98748 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	7.68612 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	3.72428 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	46.67236 (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	9.27108 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.77259 (mg/s)
Average Flow			
Mass balance at each node	mass flux in river at SW-001	M r1 =	14.3433 (mg/s)
	mass flux in river at SW-002	M r2 =	27.2217 (mg/s)
	mass flux in river at SW-003	M r3 =	31.0968 (mg/s)
	mass flux in river at SW-004	M r4 =	45.6210 (mg/s)
	mass flux in river at SW-004A	M r4A =	103.3918 (mg/s)
	mass flux in river at SW-005	M r5 =	192.9282 (mg/s)
	mass flux in river at USGS Gage	M r6 =	204.3366 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M cl =	261.0547 (mg/s)
	concentration in river at SW-001	C r1 =	0.08891 (mg/L)
	concentration in river at SW-002	C r2 =	0.08533 (mg/L)
	concentration in river at SW-003	C r3 =	0.08508 (mg/L)
	concentration in river at SW-004	C r4 =	0.08436 (mg/L)
	concentration in river at SW-004A	C r4A =	0.08340 (mg/L)
	concentration in river at SW-005	C r5 =	0.08294 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.08343 (mg/L)
	concentration in Colby Lake	C cl =	0.08261 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case	Year 10			
Parameter	Iron			
Input concentration data	concentration of surface water into SW-001	C_s1 =	1.6000 (mg/L)	
	concentration of surface water into SW-002	C_s2 =	1.6000 (mg/L)	
	concentration of surface water into SW-003	C_s3 =	1.6000 (mg/L)	
	concentration of surface water into SW-004	C_s4 =	1.6000 (mg/L)	
	concentration of surface water into SW-004A	C_s4A =	1.6000 (mg/L)	
	concentration of surface water into SW-005	C_s5 =	1.6000 (mg/L)	
	concentration of surface water into USGS Gage	C_s6 =	1.6000 (mg/L)	
	concentration of surface water into Colby Lake	C_scl =	1.6000 (mg/L)	
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	1.6000 (mg/L)	
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0300 (mg/L)	
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)	
	concentration of ground water into SW-001	C_g1 =	2.8440 (mg/L)	
	concentration of ground water into SW-002	C_g2 =	2.8440 (mg/L)	
	concentration of ground water into SW-003	C_g3 =	2.8440 (mg/L)	
	concentration of ground water into SW-004	C_g4 =	2.8440 (mg/L)	
	concentration of ground water into SW-004A	C_g4A =	2.8440 (mg/L)	
	concentration of ground water into SW-005	C_g5 =	2.8440 (mg/L)	
	concentration of ground water into USGS Gage	C_g6 =	2.8440 (mg/L)	
	concentration of ground water into Colby Lake	C_gcl =	2.8440 (mg/L)	
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)	
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)	
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.8100 (mg/L)	
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.8100 (mg/L)	
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.8100 (mg/L)	
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.8100 (mg/L)	
	concentration of liner leakage from LOSP	C_gC4LO =	235.0000 (mg/L)	
	concentration of seepage from Overburden (Storage)	C_gOS =	0.2255 (mg/L)	
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.1500 (mg/L)	
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.8100 (mg/L)	
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.8100 (mg/L)	
	concentration of liner leakage from Cat 3LO sumps	C_g3LOs =	0.8100 (mg/L)	
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.8100 (mg/L)	
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	235.0000 (mg/L)	
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.2255 (mg/L)	
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)	
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	2.8440 (mg/L)	
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	2.8440 (mg/L)	
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	2.8440 (mg/L)	
	concentration of liner leakage from WWTF pond	C_gWTFp =	12.0635 (mg/L)	
			Average Flow	
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	204.68415 (mg/s)	
	mass flux of ground water into SW-001	M_g1 =	14.48734 (mg/s)	
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.84900 (mg/s)	
	mass flux of surface water into SW-002	M_s2 =	238.32739 (mg/s)	
	mass flux of ground water into SW-002	M_g2 =	24.90123 (mg/s)	
	mass flux of surface water into SW-003	M_s3 =	69.65750 (mg/s)	
	mass flux of ground water into SW-003	M_g3 =	8.42516 (mg/s)	
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)	
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00125 (mg/s)	
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00011 (mg/s)	
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)	
	mass flux of surface water into SW-004	M_s4 =	262.03669 (mg/s)	
	mass flux of ground water into SW-004	M_g4 =	24.91652 (mg/s)	
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)	
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)	
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)	
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00011 (mg/s)	
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00020 (mg/s)	
	mass flux of liner leakage from LOSP	M_gC4LO =	0.05055 (mg/s)	
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.48801 (mg/s)	
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)	
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)	
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00031 (mg/s)	
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.12067 (mg/s)	
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00108 (mg/s)	
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00232 (mg/s)	
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)	
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.01750 (mg/s)	
	mass flux of surface water into SW-004A	M_s4A =	1,052.35196 (mg/s)	
	mass flux of ground water into SW-004A	M_g4A =	111.41574 (mg/s)	
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)	
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.19944 (mg/s)	
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00002 (mg/s)	
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.26641 (mg/s)	
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)	
	mass flux of surface water into SW-005	M_s5 =	1,635.40479 (mg/s)	
	mass flux of ground water into SW-005	M_g5 =	182.70140 (mg/s)	
	mass flux of surface water into USGS Gage	M_s6 =	175.68264 (mg/s)	
	mass flux of ground water into USGS Gage	M_g6 =	37.82804 (mg/s)	
mass flux of surface water into Colby Lake	M_scl =	1,066.79680 (mg/s)		
mass flux of ground water into Colby Lake	M_gcl =	94.16768 (mg/s)		
mass flux of surface water from Hoyt Lakes WWTP	M_shl =	17.65920 (mg/s)		
Mass balance at each node				Average Flow
	mass flux in river at SW-001	M_r1 =	220.0205 (mg/s)	
	mass flux in river at SW-002	M_r2 =	483.2491 (mg/s)	
	mass flux in river at SW-003	M_r3 =	561.3331 (mg/s)	
	mass flux in river at SW-004	M_r4 =	848.9671 (mg/s)	
	mass flux in river at SW-004A	M_r4A =	2,013.2007 (mg/s)	
	mass flux in river at SW-005	M_r5 =	3,831.3069 (mg/s)	
	mass flux in river at USGS Gage	M_r6 =	4,044.8175 (mg/s)	
mass flux into Colby Lake	M_cl =	5,223.4412 (mg/s)		
Convert mass flux to concentration				Average Flow
	concentration in river at SW-001	C_r1 =	1.36386 (mg/L)	
	concentration in river at SW-002	C_r2 =	1.51474 (mg/L)	
	concentration in river at SW-003	C_r3 =	1.53566 (mg/L)	
	concentration in river at SW-004	C_r4 =	1.56993 (mg/L)	
	concentration in river at SW-004A	C_r4A =	1.62396 (mg/L)	
	concentration in river at SW-005	C_r5 =	1.64713 (mg/L)	
	concentration in river at USGS Gage	C_r6 =	1.65151 (mg/L)	
	concentration in Colby Lake	C_cl =	1.65296 (mg/L)	

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case	Year 10		
Parameter	Hardness		
Input concentration data	concentration of surface water into SW-001	C s1 =	110.0000 (mg/L)
	concentration of surface water into SW-002	C s2 =	110.0000 (mg/L)
	concentration of surface water into SW-003	C s3 =	110.0000 (mg/L)
	concentration of surface water into SW-004	C s4 =	110.0000 (mg/L)
	concentration of surface water into SW-004A	C s4A =	110.0000 (mg/L)
	concentration of surface water into SW-005	C s5 =	110.0000 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	110.0000 (mg/L)
	concentration of surface water into Colby Lake	C scl =	110.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	110.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	110.0000 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	66.4200 (mg/L)
	concentration of ground water into SW-002	C g2 =	66.4200 (mg/L)
	concentration of ground water into SW-003	C g3 =	66.4200 (mg/L)
	concentration of ground water into SW-004	C g4 =	66.4200 (mg/L)
	concentration of ground water into SW-004A	C g4A =	66.4200 (mg/L)
	concentration of ground water into SW-005	C g5 =	66.4200 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	66.4200 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	66.4200 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	1,729.3495 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	1,729.3495 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	1,729.3495 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	1,729.3495 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	2,150.0461 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	43.5200 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	71.5000 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	1,729.3495 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	1,729.3495 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	1,729.3495 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	1,729.3495 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	2,150.0461 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	43.5200 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	66.4200 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	66.4200 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	66.4200 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	742.0281 (mg/L)
Convert concentration to mass flux	Average Flow		
	mass flux of surface water into SW-001	M s1 =	14,072.03511 (mg/s)
	mass flux of ground water into SW-001	M g1 =	338.34348 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	3,113.00000 (mg/s)
	mass flux of surface water into SW-002	M s2 =	16,385.00801 (mg/s)
	mass flux of ground water into SW-002	M g2 =	581.55406 (mg/s)
	mass flux of surface water into SW-003	M s3 =	4,788.95337 (mg/s)
	mass flux of ground water into SW-003	M g3 =	196.76471 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	2.66964 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.23348 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00139 (mg/s)
	mass flux of surface water into SW-004	M s4 =	18,015.02242 (mg/s)
	mass flux of ground water into SW-004	M g4 =	581.91110 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.23348 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.43204 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.46253 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	94.18314 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00133 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00121 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00286 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	23.28806 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.02527 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.05414 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00002 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	1.07670 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	72,349.19705 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	2,602.05112 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	425.79819 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.03789 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	126.99004 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	112,434.07948 (mg/s)
	mass flux of ground water into SW-005	M g5 =	4,266.88722 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	12,078.18158 (mg/s)
mass flux of ground water into USGS Gage	M g6 =	883.45242 (mg/s)	
mass flux of surface water into Colby Lake	M scl =	73,342.28000 (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	2,199.23262 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	1,214.07000 (mg/s)	
Mass balance at each node	Average Flow		
	mass flux in river at SW-001	M r1 =	17,523.3786 (mg/s)
	mass flux in river at SW-002	M r2 =	34,489.9407 (mg/s)
	mass flux in river at SW-003	M r3 =	39,478.5633 (mg/s)
	mass flux in river at SW-004	M r4 =	58,195.2576 (mg/s)
	mass flux in river at SW-004A	M r4A =	133,699.3319 (mg/s)
	mass flux in river at SW-005	M r5 =	250,400.2986 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M r6 =	263,361.9326 (mg/s)
	mass flux into Colby Lake	M cl =	340,117.5152 (mg/s)
	Average Flow		
	concentration in river at SW-001	C r1 =	108.62389 (mg/L)
	concentration in river at SW-002	C r2 =	108.10812 (mg/L)
	concentration in river at SW-003	C r3 =	108.00304 (mg/L)
	concentration in river at SW-004	C r4 =	107.61585 (mg/L)
	concentration in river at SW-004A	C r4A =	107.84931 (mg/L)
	concentration in river at SW-005	C r5 =	107.65018 (mg/L)
	concentration in river at USGS Gage	C r6 =	107.53162 (mg/L)
	concentration in Colby Lake	C cl =	107.63028 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case		Year 10	
Parameter	Potassium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	1.3000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	1.3000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	1.3000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	1.3000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	1.3000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	1.3000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	1.3000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	1.3000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	1.3000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	2.7000 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	1.7500 (mg/L)
	concentration of ground water into SW-002	C_g2 =	1.7500 (mg/L)
	concentration of ground water into SW-003	C_g3 =	1.7500 (mg/L)
	concentration of ground water into SW-004	C_g4 =	1.7500 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	1.7500 (mg/L)
	concentration of ground water into SW-005	C_g5 =	1.7500 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	1.7500 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	1.7500 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	49.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	49.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	49.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	49.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	38.0000 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	2.2600 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	4.4500 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	49.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	49.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	49.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	49.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	38.0000 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	2.2600 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	1.7500 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	1.7500 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	1.7500 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	17.6277 (mg/L)
Convert concentration to mass flux	Average Flow		
	mass flux of surface water into SW-001	M_s1 =	166.30587 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	8.91450 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	76.41000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	193.64100 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	15.32249 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	56.59672 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	5.18426 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.07564 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00662 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00004 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	212.90481 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	15.33189 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00662 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.01224 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00817 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	4.89094 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00004 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00003 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00005 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	1.20935 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00067 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00143 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.02558 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	855.03597 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	68.55750 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	12.06472 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00107 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	7.90358 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	1,328.76639 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	112.42175 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	142.74215 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	23.27675 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	866.77240 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	57.94425 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	14.34810 (mg/s)
Mass balance at each node	Average Flow		
	mass flux in river at SW-001	M_r1 =	251.6304 (mg/s)
	mass flux in river at SW-002	M_r2 =	460.5939 (mg/s)
	mass flux in river at SW-003	M_r3 =	522.4571 (mg/s)
	mass flux in river at SW-004	M_r4 =	756.8490 (mg/s)
	mass flux in river at SW-004A	M_r4A =	1,700.4118 (mg/s)
	mass flux in river at SW-005	M_r5 =	3,141.5999 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	3,307.6168 (mg/s)
	mass flux into Colby Lake	M_cl =	4,246.6836 (mg/s)
	Average Flow		
	concentration in river at SW-001	C_r1 =	1.55981 (mg/L)
	concentration in river at SW-002	C_r2 =	1.44372 (mg/L)
	concentration in river at SW-003	C_r3 =	1.42931 (mg/L)
	concentration in river at SW-004	C_r4 =	1.39958 (mg/L)
	concentration in river at SW-004A	C_r4A =	1.37165 (mg/L)
	concentration in river at SW-005	C_r5 =	1.35061 (mg/L)
	concentration in river at USGS Gage	C_r6 =	1.35051 (mg/L)
	concentration in Colby Lake	C_cl =	1.34386 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case		Year 10	
Parameter		Magnesium	
Input concentration data	concentration of surface water into SW-001	C_s1 =	8.0000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	8.0000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	8.0000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	8.0000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	8.0000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	8.0000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	8.0000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	8.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	8.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	10.5000 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	8.0200 (mg/L)
	concentration of ground water into SW-002	C_g2 =	8.0200 (mg/L)
	concentration of ground water into SW-003	C_g3 =	8.0200 (mg/L)
	concentration of ground water into SW-004	C_g4 =	8.0200 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	8.0200 (mg/L)
	concentration of ground water into SW-005	C_g5 =	8.0200 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	8.0200 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	8.0200 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	93.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	93.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	93.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	93.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	372.4409 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	4.8800 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	9.0100 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	93.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	93.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	93.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	93.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	372.4409 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	4.8800 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	8.0200 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	8.0200 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	8.0200 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	62.5945 (mg/L)
Convert concentration to mass flux	Average Flow		
	mass flux of surface water into SW-001	M_s1 =	1,023.42074 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	40.85388 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	297.15000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	1,191.63695 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	70.22077 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	348.28752 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	23.75870 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.14357 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.01256 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00007 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	1,310.18345 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	70.26388 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.01256 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.02323 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.08012 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	10.56098 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00007 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00007 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00050 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	2.61135 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00305 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00654 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.09083 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	5,261.75979 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	314.18925 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	22.89834 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00204 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	16.00252 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	8,177.02396 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	515.21282 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	878.41321 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	106.67402 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	5,333.98400 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	265.55022 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	88.29600 (mg/s)
Mass balance at each node	Average Flow		
	mass flux in river at SW-001	M_r1 =	1,361.4248 (mg/s)
	mass flux in river at SW-002	M_r2 =	2,623.2823 (mg/s)
	mass flux in river at SW-003	M_r3 =	2,995.4847 (mg/s)
	mass flux in river at SW-004	M_r4 =	4,389.3214 (mg/s)
	mass flux in river at SW-004A	M_r4A =	10,004.1733 (mg/s)
	mass flux in river at SW-005	M_r5 =	18,696.4101 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	19,681.4973 (mg/s)
Convert mass flux to concentration	Average Flow		
	concentration in river at SW-001	C_r1 =	8.43920 (mg/L)
	concentration in river at SW-002	C_r2 =	8.22263 (mg/L)
	concentration in river at SW-003	C_r3 =	8.19486 (mg/L)
	concentration in river at SW-004	C_r4 =	8.11682 (mg/L)
	concentration in river at SW-004A	C_r4A =	8.06992 (mg/L)
	concentration in river at SW-005	C_r5 =	8.03782 (mg/L)
	concentration in river at USGS Gage	C_r6 =	8.03603 (mg/L)
	concentration in Colby Lake	C_cl =	8.02813 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case		Year 10	
Parameter	Manganese		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.1500 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.1500 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.1500 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.1500 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.1500 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.1500 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.1500 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.1500 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.1500 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0086 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.1240 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.1240 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.1240 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.1240 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.1240 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.1240 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.1240 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.1240 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.3036 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.7500 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.7500 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.7500 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	7.6489 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.1604 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.1160 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.3036 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.7500 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.7500 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.7500 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	7.6489 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.1604 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.1240 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.1240 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.1240 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.8547 (mg/L)
		Average Flow	
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	19.18914 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.63166 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.24338 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	22.34319 (mg/s)
	mass flux of surface water into SW-002	M_g2 =	1.08571 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	6.53039 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.36734 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00116 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00010 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	24.56594 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	1.08637 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00010 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00019 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00165 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.34711 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00001 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.08583 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00005 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00010 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00124 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	98.65800 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	4.85779 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.07476 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.20603 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	153.31920 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	7.96588 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	16.47025 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	1.64932 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	100.01220 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	4.10576 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	1.65555 (mg/s)
		Average Flow	
Mass balance at each node	mass flux in river at SW-001	M_r1 =	20.0642 (mg/s)
	mass flux in river at SW-002	M_r2 =	43.4931 (mg/s)
	mass flux in river at SW-003	M_r3 =	50.3921 (mg/s)
	mass flux in river at SW-004	M_r4 =	76.4906 (mg/s)
	mass flux in river at SW-004A	M_r4A =	180.2772 (mg/s)
	mass flux in river at SW-005	M_r5 =	341.5623 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	359.8819 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	465.4554 (mg/s)
			Average Flow
	concentration in river at SW-001	C_r1 =	0.12437 (mg/L)
	concentration in river at SW-002	C_r2 =	0.13633 (mg/L)
	concentration in river at SW-003	C_r3 =	0.13786 (mg/L)
	concentration in river at SW-004	C_r4 =	0.14143 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.14542 (mg/L)
	concentration in river at SW-005	C_r5 =	0.14684 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.14686 (mg/L)
	concentration in Colby Lake	C_cl =	0.14729 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 10 Sodium		
Input concentration data	concentration of surface water into SW-001	C s1 =	2.5000 (mg/L)
	concentration of surface water into SW-002	C s2 =	2.5000 (mg/L)
	concentration of surface water into SW-003	C s3 =	2.5000 (mg/L)
	concentration of surface water into SW-004	C s4 =	2.5000 (mg/L)
	concentration of surface water into SW-004A	C s4A =	2.5000 (mg/L)
	concentration of surface water into SW-005	C s5 =	2.5000 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	2.5000 (mg/L)
	concentration of surface water into Colby Lake	C scl =	2.5000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	2.5000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	4.8000 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	13.3300 (mg/L)
	concentration of ground water into SW-002	C g2 =	13.3300 (mg/L)
	concentration of ground water into SW-003	C g3 =	13.3300 (mg/L)
	concentration of ground water into SW-004	C g4 =	13.3300 (mg/L)
	concentration of ground water into SW-004A	C g4A =	13.3300 (mg/L)
	concentration of ground water into SW-005	C g5 =	13.3300 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	13.3300 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	13.3300 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	207.4110 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	651.5481 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	681.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	392.3566 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	46.7329 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	4.6000 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	7.1900 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	207.4110 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	651.5481 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	681.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	392.3566 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	46.7329 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	4.6000 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	13.3300 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	13.3300 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	13.3300 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	168.1098 (mg/L)
			Average Flow
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	319.81898 (mg/s)
	mass flux of ground water into SW-001	M g1 =	67.90302 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	135.84000 (mg/s)
	mass flux of surface water into SW-002	M s2 =	372.38655 (mg/s)
	mass flux of ground water into SW-002	M g2 =	116.71358 (mg/s)
	mass flux of surface water into SW-003	M s3 =	108.83985 (mg/s)
	mass flux of ground water into SW-003	M g3 =	39.48921 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	1.00581 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.09194 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00053 (mg/s)
	mass flux of surface water into SW-004	M s4 =	409.43233 (mg/s)
	mass flux of ground water into SW-004	M g4 =	116.78523 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.09194 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.09802 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.01005 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	9.95502 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00053 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00028 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00006 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	2.46151 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00507 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.01087 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.24393 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	1,644.29993 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	522.21231 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	51.06847 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00454 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	12.77005 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	2,555.31999 (mg/s)
	mass flux of ground water into SW-005	M g5 =	856.33253 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	274.50413 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	177.30233 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	1,666.87000 (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	441.36963 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl =	27.59250 (mg/s)
			Average Flow
Mass balance at each node	mass flux in river at SW-001	M r1 =	523.5620 (mg/s)
	mass flux in river at SW-002	M r2 =	1,012.6621 (mg/s)
	mass flux in river at SW-003	M r3 =	1,162.0895 (mg/s)
	mass flux in river at SW-004	M r4 =	1,701.1843 (mg/s)
	mass flux in river at SW-004A	M r4A =	3,931.5396 (mg/s)
	mass flux in river at SW-005	M r5 =	7,343.1921 (mg/s)
	mass flux in river at USGS Gage	M r6 =	7,794.9968 (mg/s)
mass flux into Colby Lake	M cl =	9,930.8307 (mg/s)	
			Average Flow
Convert mass flux to concentration	concentration in river at SW-001	C r1 =	3.24546 (mg/L)
	concentration in river at SW-002	C r2 =	3.17417 (mg/L)
	concentration in river at SW-003	C r3 =	3.17917 (mg/L)
	concentration in river at SW-004	C r4 =	3.14586 (mg/L)
	concentration in river at SW-004A	C r4A =	3.17140 (mg/L)
	concentration in river at SW-005	C r5 =	3.15693 (mg/L)
	concentration in river at USGS Gage	C r6 =	3.18273 (mg/L)
	concentration in Colby Lake	C cl =	3.14261 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case		Year 10	
Parameter	Nickel		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0016 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0016 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0016 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0016 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0016 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0016 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0016 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0016 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0033 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0016 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0163 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0163 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0163 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0163 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0163 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0163 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0163 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0163 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.1310 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.8600 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.8600 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.8600 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	38.7179 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0080 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.0190 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.1310 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.8600 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.8600 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.8600 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	38.7179 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0080 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0163 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0163 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0163 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	3.4148 (mg/L)
Convert concentration to mass flux	Average Flow		
	mass flux of surface water into SW-001	M_s1 =	0.19957 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.08293 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.04387 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	0.23237 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.14254 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.06792 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.04823 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00133 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00012 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.25549 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.14263 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00012 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00021 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00833 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.01725 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00005 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00426 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00001 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00001 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00495 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	1.02604 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.63778 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.03224 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.03375 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	1.59452 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	1.04584 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.17129 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.21654 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	1.04013 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.53905 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.03642 (mg/s)
Mass balance at each node	Average Flow		
	mass flux in river at SW-001	M_r1 =	0.3264 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.7013 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.8189 (mg/s)
	mass flux in river at SW-004	M_r4 =	1.2522 (mg/s)
	mass flux in river at SW-004A	M_r4A =	2.9820 (mg/s)
	mass flux in river at SW-005	M_r5 =	5.6224 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	6.0102 (mg/s)
	mass flux into Colby Lake	M_cl =	7.6258 (mg/s)
	Average Flow		
	concentration in river at SW-001	C_r1 =	0.00202 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00220 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00224 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00232 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00241 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00242 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00245 (mg/L)
	concentration in Colby Lake	C_cl =	0.00241 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 10 Lead			
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0005 (mg/L)	
	concentration of surface water into SW-002	C s2 =	0.0005 (mg/L)	
	concentration of surface water into SW-003	C s3 =	0.0005 (mg/L)	
	concentration of surface water into SW-004	C s4 =	0.0005 (mg/L)	
	concentration of surface water into SW-004A	C s4A =	0.0005 (mg/L)	
	concentration of surface water into SW-005	C s5 =	0.0005 (mg/L)	
	concentration of surface water into USGS Gage	C s6 =	0.0005 (mg/L)	
	concentration of surface water into Colby Lake	C scl =	0.0005 (mg/L)	
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0005 (mg/L)	
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0002 (mg/L)	
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)	
	concentration of ground water into SW-001	C g1 =	0.0011 (mg/L)	
	concentration of ground water into SW-002	C g2 =	0.0011 (mg/L)	
	concentration of ground water into SW-003	C g3 =	0.0011 (mg/L)	
	concentration of ground water into SW-004	C g4 =	0.0011 (mg/L)	
	concentration of ground water into SW-004A	C g4A =	0.0011 (mg/L)	
	concentration of ground water into SW-005	C g5 =	0.0011 (mg/L)	
	concentration of ground water into USGS Gage	C g6 =	0.0011 (mg/L)	
	concentration of ground water into Colby Lake	C gcl =	0.0011 (mg/L)	
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)	
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)	
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.0157 (mg/L)	
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.0239 (mg/L)	
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0278 (mg/L)	
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0528 (mg/L)	
	concentration of liner leakage from LOSP	C gC4LO =	0.0528 (mg/L)	
	concentration of seepage from Overburden (Storage)	C gOS =	0.0007 (mg/L)	
	concentration of seepage from Overburden (Cat 1)	C gO12 =	(mg/L)	
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.0157 (mg/L)	
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.0239 (mg/L)	
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.0278 (mg/L)	
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0528 (mg/L)	
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0528 (mg/L)	
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0007 (mg/L)	
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)	
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0011 (mg/L)	
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0011 (mg/L)	
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0011 (mg/L)	
	concentration of liner leakage from WWTF ponc	C_gWTFp =	0.0148 (mg/L)	
	Convert concentration to mass flux			Average Flow
		mass flux of surface water into SW-001	M s1 =	0.06396 (mg/s)
		mass flux of ground water into SW-001	M g1 =	0.00571 (mg/s)
mass flux of surface discharges from upstream of PM-1		M sns =	0.00425 (mg/s)	
mass flux of surface water into SW-002		M s2 =	0.07448 (mg/s)	
mass flux of ground water into SW-002		M g2 =	0.00981 (mg/s)	
mass flux of surface water into SW-003		M s3 =	0.02177 (mg/s)	
mass flux of ground water into SW-003		M g3 =	0.00332 (mg/s)	
mass flux of seepage from East Pit to SW-003		M gep_003 =	#N/A (mg/s)	
mass flux of liner leakage from Cat 2/3 stockpile to SW-003		M gC3_003 =	0.00004 (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-003		M gC3LO_003 =	0.00000 (mg/s)	
mass flux of liner leakage from Cat 2/3 sumps to SW-003		M gC3s_003 =	0.00000 (mg/s)	
mass flux of surface water into SW-004		M s4 =	0.08189 (mg/s)	
mass flux of ground water into SW-004		M g4 =	0.00981 (mg/s)	
mass flux of seepage from East Pit to SW-004		M gep_004 =	#N/A (mg/s)	
mass flux of seepage from West Pit		M gwp =	#N/A (mg/s)	
mass flux of liner leakage from Cat 2/3 stockpile to SW-004		M gC3_004 =	- (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-004		M gC3LO_004 =	0.00000 (mg/s)	
mass flux of liner leakage from Cat 4 stockpile		M gC4 =	0.00001 (mg/s)	
mass flux of liner leakage from LOSP		M gC4LO =	0.00001 (mg/s)	
mass flux of seepage from Overburden (Storage)		M gOS =	0.00146 (mg/s)	
mass flux of liner leakage from Cat 3LO sumps to SW-004		M gC3LOs_004 =	0.00000 (mg/s)	
mass flux of liner leakage from Cat 4 sumps		M gC4s =	0.00000 (mg/s)	
mass flux of liner leakage from LOSP sumps		M gC4LOs =	0.00000 (mg/s)	
mass flux of seepage from Overburden Ponds - PW1		M gOp1 =	0.00036 (mg/s)	
mass flux of leakage from Haul Road Pond - PW2		M gHRp2 =	0.00000 (mg/s)	
mass flux of leakage from Haul Road Pond - PW4		M gHRp4 =	0.00000 (mg/s)	
mass flux of leakage from RTH Pond - PW3		M gRTHp =	0.00000 (mg/s)	
mass flux of liner leakage from WWTF pond		M_gWTFp =	0.00002 (mg/s)	
mass flux of surface water into SW-004A		M s4A =	0.32886 (mg/s)	
mass flux of ground water into SW-004A		M g4A =	0.04388 (mg/s)	
mass flux of West Pit overflow		M sms =	#N/A (mg/s)	
mass flux of liner leakage from Cat 1 stockpile		M gC12 =	0.00386 (mg/s)	
mass flux of liner leakage from Cat 1 sumps		M gC12s =	0.00000 (mg/s)	
mass flux of seepage from Overburden (Cat 1)		M gO12 =	- (mg/s)	
mass flux of seepage from Overburden Pond - PW7		M gOp7 =	#N/A (mg/s)	
mass flux of surface water into SW-005		M s5 =	0.51106 (mg/s)	
mass flux of ground water into SW-005		M g5 =	0.07195 (mg/s)	
mass flux of surface water into USGS Gage		M s6 =	0.05490 (mg/s)	
mass flux of ground water into USGS Gage		M g6 =	0.01490 (mg/s)	
mass flux of surface water into Colby Lake		M scl =	0.33337 (mg/s)	
mass flux of ground water into Colby Lake		M gcl =	0.03708 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP		M shl =	0.00552 (mg/s)	
Mass balance at each node			Average Flow	
	mass flux in river at SW-001	M r1 =	0.0739 (mg/s)	
	mass flux in river at SW-002	M r2 =	0.1582 (mg/s)	
	mass flux in river at SW-003	M r3 =	0.1833 (mg/s)	
	mass flux in river at SW-004	M r4 =	0.2769 (mg/s)	
	mass flux in river at SW-004A	M r4A =	0.6535 (mg/s)	
	mass flux in river at SW-005	M r5 =	1.2365 (mg/s)	
Convert mass flux to concentration	mass flux in river at USGS Gage	M r6 =	1.3063 (mg/s)	
	mass flux into Colby Lake	M cl =	1.6823 (mg/s)	
			Average Flow	
	concentration in river at SW-001	C r1 =	0.00046 (mg/L)	
	concentration in river at SW-002	C r2 =	0.00050 (mg/L)	
	concentration in river at SW-003	C r3 =	0.00050 (mg/L)	
	concentration in river at SW-004	C r4 =	0.00051 (mg/L)	
	concentration in river at SW-004A	C r4A =	0.00053 (mg/L)	
	concentration in river at SW-005	C r5 =	0.00053 (mg/L)	
	concentration in river at USGS Gage	C r6 =	0.00053 (mg/L)	
	concentration in Colby Lake	C cl =	0.00053 (mg/L)	

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 10 Antimony		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0015 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0015 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0015 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0015 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0015 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0015 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0015 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0015 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0015 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0015 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0015 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0015 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0015 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0015 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0015 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0015 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0015 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0015 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.0800 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.0800 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0800 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0800 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.0225 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0003 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.0004 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.0800 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.0800 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.0800 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0800 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0225 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0003 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0015 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0015 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0015 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0307 (mg/L)
Convert concentration to mass flux	Average Flow		
	mass flux of surface water into SW-001	M s1 =	0.19189 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.00764 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.04245 (mg/s)
	mass flux of surface water into SW-002	M s2 =	0.22343 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.01313 (mg/s)
	mass flux of surface water into SW-003	M s3 =	0.06530 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.00444 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.00012 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	0.24566 (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.01314 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00002 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.00065 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.00016 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00004 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	0.98658 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.05876 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	0.01970 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	0.00071 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	1.53319 (mg/s)
	mass flux of ground water into SW-005	M g5 =	0.09636 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	0.16470 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.01995 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	1.00012 (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	0.04967 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.01656 (mg/s)
Mass balance at each node	Average Flow		
	mass flux in river at SW-001	M r1 =	0.2420 (mg/s)
	mass flux in river at SW-002	M r2 =	0.4785 (mg/s)
	mass flux in river at SW-003	M r3 =	0.5484 (mg/s)
	mass flux in river at SW-004	M r4 =	0.8081 (mg/s)
	mass flux in river at SW-004A	M r4A =	1.8739 (mg/s)
	mass flux in river at SW-005	M r5 =	3.5034 (mg/s)
	mass flux in river at USGS Gage	M r6 =	3.6881 (mg/s)
mass flux into Colby Lake	M cl =	4.7544 (mg/s)	
Convert mass flux to concentration	Average Flow		
	concentration in river at SW-001	C r1 =	0.00150 (mg/L)
	concentration in river at SW-002	C r2 =	0.00150 (mg/L)
	concentration in river at SW-003	C r3 =	0.00150 (mg/L)
	concentration in river at SW-004	C r4 =	0.00149 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00151 (mg/L)
	concentration in river at SW-005	C r5 =	0.00151 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00151 (mg/L)
	concentration in Colby Lake	C cl =	0.00150 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 10 Selenium		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0005 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0005 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0005 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0005 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0005 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0005 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0005 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0005 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0005 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0005 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0019 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0019 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0019 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0019 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0019 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0019 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0019 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0019 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.0029 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.0029 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0029 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0029 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.0029 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0004 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.0019 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.0029 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.0029 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.0029 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0029 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0029 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0004 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0019 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0019 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0019 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	0.0023 (mg/L)
		Average Flow	
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	0.06396 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.00973 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.01415 (mg/s)
	mass flux of surface water into SW-002	M s2 =	0.07448 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.01672 (mg/s)
	mass flux of surface water into SW-003	M s3 =	0.02177 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.00566 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	0.08189 (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.01673 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.00096 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.00024 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00000 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	0.32886 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.07483 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	0.00071 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	0.00337 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	0.51106 (mg/s)
	mass flux of ground water into SW-005	M g5 =	0.12270 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	0.05490 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.02540 (mg/s)
mass flux of surface water into Colby Lake	M scl =	0.33337 (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	0.06324 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.00552 (mg/s)	
		Average Flow	
Mass balance at each node	mass flux in river at SW-001	M r1 =	0.0878 (mg/s)
	mass flux in river at SW-002	M r2 =	0.1790 (mg/s)
	mass flux in river at SW-003	M r3 =	0.2065 (mg/s)
	mass flux in river at SW-004	M r4 =	0.3063 (mg/s)
	mass flux in river at SW-004A	M r4A =	0.7141 (mg/s)
	mass flux in river at SW-005	M r5 =	1.3478 (mg/s)
	mass flux in river at USGS Gage	M r6 =	1.4281 (mg/s)
mass flux into Colby Lake	M cl =	1.8303 (mg/s)	
		Average Flow	
Convert mass flux to concentration	concentration in river at SW-001	C r1 =	0.00054 (mg/L)
	concentration in river at SW-002	C r2 =	0.00056 (mg/L)
	concentration in river at SW-003	C r3 =	0.00056 (mg/L)
	concentration in river at SW-004	C r4 =	0.00057 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00058 (mg/L)
	concentration in river at SW-005	C r5 =	0.00058 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00058 (mg/L)
concentration in Colby Lake	C cl =	0.00058 (mg/L)	

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 10 Sulfate		
Input concentration data	concentration of surface water into SW-001	C s1 =	9.0000 (mg/L)
	concentration of surface water into SW-002	C s2 =	9.0000 (mg/L)
	concentration of surface water into SW-003	C s3 =	9.0000 (mg/L)
	concentration of surface water into SW-004	C s4 =	9.0000 (mg/L)
	concentration of surface water into SW-004A	C s4A =	9.0000 (mg/L)
	concentration of surface water into SW-005	C s5 =	9.0000 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	9.0000 (mg/L)
	concentration of surface water into Colby Lake	C scl =	9.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	9.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	22.0000 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	16.1300 (mg/L)
	concentration of ground water into SW-002	C g2 =	16.1300 (mg/L)
	concentration of ground water into SW-003	C g3 =	16.1300 (mg/L)
	concentration of ground water into SW-004	C g4 =	16.1300 (mg/L)
	concentration of ground water into SW-004A	C g4A =	16.1300 (mg/L)
	concentration of ground water into SW-005	C g5 =	16.1300 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	16.1300 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	16.1300 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	507.1657 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	2,340.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	2,340.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	2,340.0000 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	4,780.1544 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	35.1700 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	68.3000 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	507.1657 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	2,340.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	2,340.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	2,340.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	4,780.1544 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	35.1700 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	16.1300 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	16.1300 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	16.1300 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	902.4217 (mg/L)
Convert concentration to mass flux	Average Flow		
	mass flux of surface water into SW-001	M s1 =	1,151.34833 (mg/s)
	mass flux of ground water into SW-001	M g1 =	82.16622 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	622.60000 (mg/s)
	mass flux of surface water into SW-002	M s2 =	1,340.59156 (mg/s)
	mass flux of ground water into SW-002	M g2 =	141.22956 (mg/s)
	mass flux of surface water into SW-003	M s3 =	391.82346 (mg/s)
	mass flux of ground water into SW-003	M g3 =	47.78402 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	3.61231 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.31593 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00189 (mg/s)
	mass flux of surface water into SW-004	M s4 =	1,473.95638 (mg/s)
	mass flux of ground water into SW-004	M g4 =	141.31626 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.31593 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.58460 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	1.02834 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	76.11262 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00180 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00164 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00637 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	18.81988 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00614 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.01315 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	1.30944 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	5,919.47976 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	631.90432 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	124.87368 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.01111 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	121.30657 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	9,199.15196 (mg/s)
	mass flux of ground water into SW-005	M g5 =	1,036.20733 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	988.21486 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	214.54513 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	6,000.73200 (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	534.08043 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl =	99.33300 (mg/s)
Mass balance at each node	Average Flow		
	mass flux in river at SW-001	M r1 =	1,856.1145 (mg/s)
	mass flux in river at SW-002	M r2 =	3,337.9357 (mg/s)
	mass flux in river at SW-003	M r3 =	3,781.4733 (mg/s)
	mass flux in river at SW-004	M r4 =	5,494.9458 (mg/s)
	mass flux in river at SW-004A	M r4A =	12,292.5212 (mg/s)
	mass flux in river at SW-005	M r5 =	22,527.8805 (mg/s)
	mass flux in river at USGS Gage	M r6 =	23,730.6405 (mg/s)
mass flux into Colby Lake	M cl =	30,364.7859 (mg/s)	
Convert mass flux to concentration	Average Flow		
	concentration in river at SW-001	C r1 =	11.50568 (mg/L)
	concentration in river at SW-002	C r2 =	10.46270 (mg/L)
	concentration in river at SW-003	C r3 =	10.34512 (mg/L)
	concentration in river at SW-004	C r4 =	10.16136 (mg/L)
	concentration in river at SW-004A	C r4A =	9.91583 (mg/L)
	concentration in river at SW-005	C r5 =	9.68501 (mg/L)
	concentration in river at USGS Gage	C r6 =	9.68931 (mg/L)
	concentration in Colby Lake	C cl =	9.60894 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case	Year 10		
Parameter	Thallium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0004 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0004 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0004 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0004 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0004 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0004 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0004 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0004 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0004 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0003 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0000 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0000 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0000 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0000 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0000 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0000 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0000 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0000 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0001 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0000 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0001 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0000 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0000 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0000 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0000 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0011 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	0.05117 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00002 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.00809 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	0.05958 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.00004 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.01741 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00001 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.06551 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.00004 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00009 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00002 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00000 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	0.26309 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.00016 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	0.40885 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.00026 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.04392 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.00005 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	0.26670 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.00013 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00441 (mg/s)
Mass balance at each node	Average Flow		
	mass flux in river at SW-001	M_r1 =	0.0593 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.1189 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.1363 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.2020 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.4652 (mg/s)
	mass flux in river at SW-005	M_r5 =	0.8743 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	0.9183 (mg/s)
	mass flux into Colby Lake	M_cl =	1.1896 (mg/s)
	Average Flow		
	concentration in river at SW-001	C_r1 =	0.00037 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00037 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00037 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00037 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00038 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00038 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00037 (mg/L)
	concentration in Colby Lake	C_cl =	0.00038 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case	Year 10		
Parameter	Vanadium		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0009 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0009 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0009 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0009 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0009 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0009 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0009 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0009 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0009 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0043 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0043 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0043 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0043 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0043 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0043 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0043 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0043 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0043 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.0782 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	1.1626 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	1.3498 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.1539 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.0115 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0017 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.0014 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.0782 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	1.1626 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	1.3498 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.1539 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0115 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0017 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0043 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0043 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0043 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.2651 (mg/L)
Convert concentration to mass flux	Average Flow		
	mass flux of surface water into SW-001	M s1 =	0.11513 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.02190 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.02169 (mg/s)
	mass flux of surface water into SW-002	M s2 =	0.13406 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.03765 (mg/s)
	mass flux of surface water into SW-003	M s3 =	0.03918 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.01274 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.00179 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00018 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	0.14740 (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.03767 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00018 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00004 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.00374 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.00093 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00038 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	0.59195 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.16846 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	0.01925 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	0.00249 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	0.91992 (mg/s)
	mass flux of ground water into SW-005	M g5 =	0.27624 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	0.09882 (mg/s)
mass flux of ground water into USGS Gage	M g6 =	0.05719 (mg/s)	
mass flux of surface water into Colby Lake	M scl =	0.60007 (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	0.14238 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.00993 (mg/s)	
Mass balance at each node	Average Flow		
	mass flux in river at SW-001	M r1 =	0.2587 (mg/s)
	mass flux in river at SW-002	M r2 =	0.4304 (mg/s)
	mass flux in river at SW-003	M r3 =	0.4843 (mg/s)
	mass flux in river at SW-004	M r4 =	0.6747 (mg/s)
	mass flux in river at SW-004A	M r4A =	1.4568 (mg/s)
	mass flux in river at SW-005	M r5 =	2.6530 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M r6 =	2.8090 (mg/s)
	mass flux into Colby Lake	M cl =	3.5614 (mg/s)
	Average Flow		
	concentration in river at SW-001	C r1 =	0.00160 (mg/L)
	concentration in river at SW-002	C r2 =	0.00135 (mg/L)
	concentration in river at SW-003	C r3 =	0.00133 (mg/L)
	concentration in river at SW-004	C r4 =	0.00125 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00118 (mg/L)
	concentration in river at SW-005	C r5 =	0.00114 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00115 (mg/L)
	concentration in Colby Lake	C cl =	0.00113 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case		Year 10	
Parameter	Zinc		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0160 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0160 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0160 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0160 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0160 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0160 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0160 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0160 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0620 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0073 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0275 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0275 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0275 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0275 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0275 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0275 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0275 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0275 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0900 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0900 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0900 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0900 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	26.0000 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0046 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.0030 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0900 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0900 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0900 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0900 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	26.0000 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0046 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0275 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0275 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0275 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	1.2883 (mg/L)
Convert concentration to mass flux	Average Flow		
	mass flux of surface water into SW-001	M_s1 =	2.04684 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.14009 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.20744 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	2.38327 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.24078 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.69658 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.08147 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00014 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	2.62037 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.24093 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00002 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00559 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00987 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00003 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00244 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00001 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00002 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00187 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	10.52352 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	1.07733 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.02216 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.00533 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	16.35405 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	1.76663 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	1.75683 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.36578 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	10.66797 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.91055 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.68429 (mg/s)
Mass balance at each node	Average Flow		
	mass flux in river at SW-001	M_r1 =	2.3944 (mg/s)
	mass flux in river at SW-002	M_r2 =	5.0184 (mg/s)
	mass flux in river at SW-003	M_r3 =	5.7966 (mg/s)
	mass flux in river at SW-004	M_r4 =	8.6778 (mg/s)
	mass flux in river at SW-004A	M_r4A =	20.3061 (mg/s)
	mass flux in river at SW-005	M_r5 =	38.4268 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	40.5494 (mg/s)
	mass flux into Colby Lake	M_cl =	52.8122 (mg/s)
	Average Flow		
	concentration in river at SW-001	C_r1 =	0.01484 (mg/L)
	concentration in river at SW-002	C_r2 =	0.01573 (mg/L)
	concentration in river at SW-003	C_r3 =	0.01586 (mg/L)
	concentration in river at SW-004	C_r4 =	0.01605 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.01638 (mg/L)
	concentration in river at SW-005	C_r5 =	0.01652 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.01656 (mg/L)
	concentration in Colby Lake	C_cl =	0.01671 (mg/L)

## FLOWS

Case Flow	Year 10 High Flow Conditions (10-yr, 24-hr rainfall event)		
Total flow in Partridge River	flow in river at SW-001	Q_r1_H =	85.35 (cfs)
	flow in river at SW-002	Q_r2_H =	172.42 (cfs)
	flow in river at SW-003	Q_r3_H =	227.73 (cfs)
	flow in river at SW-004	Q_r4_H =	284.59 (cfs)
	flow in river at SW-004A	Q_r4a_H =	920.03 (cfs)
	flow in river at SW-005	Q_r5_H =	1,084.81 (cfs)
	flow in river at USGS Gage	Q_r6_H =	1,086.22 (cfs)
	total flow into Colby Lake	Q_cl_H =	1,423.75 (cfs)
	flow check	Q_ck_H =	1,423.75 (cfs)
Input flow data	surface water flow into SW-001	Q_s1_H =	84.17 (cfs)
	surface water flow into SW-002	Q_s2_H =	86.76 (cfs)
	surface water flow into SW-003	Q_s3_H =	55.20 (cfs)
	surface water flow into SW-004	Q_s4_H =	56.45 (cfs)
	surface water flow into SW-004A	Q_s4a_H =	633.87 (cfs)
	surface water flow into SW-005	Q_s5_H =	162.51 (cfs)
	surface water flow into USGS Gage	Q_s6_H =	0.94 (cfs)
	surface water flow into Colby Lake	Q_scl_H =	335.97 (cfs)
	surface water inflow from Hoyt Lakes WWTP	Q_shl_H =	0.39 (cfs)
	surface water inflow from discharges upstream of PM-1	Q_sns_H =	1.00 (cfs)
	surface water flow from West Pit Overflow	Q_sms_H =	- (cfs)
	ground water flow into SW-001	Q_g1_H =	0.18 (cfs)
	ground water flow into SW-002	Q_g2_H =	0.31 (cfs)
	ground water flow into SW-003	Q_g3_H =	0.10 (cfs)
	ground water flow into SW-004	Q_g4_H =	0.31 (cfs)
	ground water flow into SW-004A	Q_g4a_H =	1.38 (cfs)
	ground water flow into SW-005	Q_g5_H =	2.27 (cfs)
	ground water flow into USGS Gage	Q_g6_H =	0.47 (cfs)
	ground water flow into Colby Lake	Q_gcl_H =	1.17 (cfs)
	ground water seepage from East Pit to SW-003	Q_gep_003_H =	- (cfs)
	ground water seepage from East Pit to SW-004	Q_gep_004_H =	- (cfs)
	ground water seepage from West Pit	Q_gwp_H =	- (cfs)
	ground water liner leakage from Cat 1 stockpile	Q_gC12_H =	0.0270 (cfs)
	ground water liner leakage from Cat 2/3 stockpile to SW-003	Q_gC3_003_H =	0.0003 (cfs)
	ground water liner leakage from Cat 2/3 stockpile to SW-004	Q_gC3_004_H =	- (cfs)
	ground water liner leakage from Cat 3LO stockpile to SW-003	Q_gC3LO_003_H =	0.0001 (cfs)
	ground water liner leakage from Cat 3LO stockpile to SW-004	Q_gC3LO_004_H =	0.0001 (cfs)
	ground water liner leakage from Cat 4 stockpile	Q_gC4_H =	0.0002 (cfs)
	ground water liner leakage from LO SP	Q_gC4LO_H =	0.0002 (cfs)
	ground water seepage from Overburden Storage	Q_gOS_H =	0.0765 (cfs)
	ground water seepage from Overburden (Cat 1)	Q_gO12_H =	0.1674 (cfs)
	ground water liner leakage from Cat 1 sumps	Q_gC12s_H =	0.0000 (cfs)
	ground water liner leakage from Cat 2/3 sumps	Q_gC3s_H =	0.0000 (cfs)
	ground water liner leakage from Cat 3LO sumps	Q_gC3LOs_H =	0.0000 (cfs)
	ground water liner leakage from Cat 4 sumps	Q_gC4s_H =	0.0000 (cfs)
	ground water liner leakage from LO SP sumps	Q_gC4LOs_H =	0.0000 (cfs)
	ground water seepage from Overburden pond - PW1	Q_gOp1_H =	0.0189 (cfs)
	ground water seepage from Overburden pond - PW7	Q_gOp7_H =	- (cfs)
	ground water leakage from Haul Road pond - PW2	Q_gHRp2_H =	0.0000 (cfs)
	ground water leakage from Haul Road pond - PW4	Q_gHRp4_H =	0.0000 (cfs)
	ground water leakage from RTH pond - PW3	Q_gRTHp_H =	0.0000 (cfs)
	ground water liner leakage from WWTF pond	Q_gWTFp_H =	0.0001 (cfs)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 10 Silver		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0001 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0001 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0001 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0001 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0001 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0001 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0001 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0001 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0001 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0001 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0006 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0006 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0006 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0006 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0006 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0006 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0006 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0006 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.0007 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.0007 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0007 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0007 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.0007 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	- (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.0007 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.0007 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.0007 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0007 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0007 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	- (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0006 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0006 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0006 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	0.0008 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	0.23820 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.00280 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.00340 (mg/s)
	mass flux of surface water into SW-002	M s2 =	0.24553 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.00482 (mg/s)
	mass flux of surface water into SW-003	M s3 =	0.15622 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.00163 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	0.15976 (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.00482 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	- (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00000 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	1.79385 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.02155 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	0.00053 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	0.45990 (mg/s)
	mass flux of ground water into SW-005	M g5 =	0.03533 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	0.00266 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.00732 (mg/s)
mass flux of surface water into Colby Lake	M scl =	0.95080 (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	0.01821 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.00110 (mg/s)	
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M r1 =	0.2444 (mg/s)
	mass flux in river at SW-002	M r2 =	0.4947 (mg/s)
	mass flux in river at SW-003	M r3 =	0.6526 (mg/s)
	mass flux in river at SW-004	M r4 =	0.8172 (mg/s)
	mass flux in river at SW-004A	M r4A =	2.6331 (mg/s)
	mass flux in river at SW-005	M r5 =	3.1284 (mg/s)
	mass flux in river at USGS Gage	M r6 =	3.1383 (mg/s)
	mass flux into Colby Lake	M cl =	4.1065 (mg/s)
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C r1 =	0.00010 (mg/L)
	concentration in river at SW-002	C r2 =	0.00010 (mg/L)
	concentration in river at SW-003	C r3 =	0.00010 (mg/L)
	concentration in river at SW-004	C r4 =	0.00010 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00010 (mg/L)
	concentration in river at SW-005	C r5 =	0.00010 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00010 (mg/L)
	concentration in Colby Lake (H	C cl =	0.00011 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 10 Aluminum		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0700 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0700 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0700 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0700 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0700 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0700 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0700 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0700 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0700 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0173 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.1250 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.1250 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.1250 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.1250 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.1250 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.1250 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.1250 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.1250 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	1.6800 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	1.6800 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	1.6800 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	1.6800 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	37.7882 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.4106 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.1400 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	1.6800 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	1.6800 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	1.6800 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	1.6800 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	37.7882 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.4106 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.1250 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.1250 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.1250 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	4.4167 (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M s1 =	166.74077 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.63675 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.48959 (mg/s)
	mass flux of surface water into SW-002	M s2 =	171.87338 (mg/s)
	mass flux of ground water into SW-002	M g2 =	1.09446 (mg/s)
	mass flux of surface water into SW-003	M s3 =	109.35395 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.37030 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.01348 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00641 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	111.83521 (mg/s)
	mass flux of ground water into SW-004	M g4 =	1.09514 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00641 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.01186 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.22977 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.88859 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00005 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.21972 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00005 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00010 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00641 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	1,255.69608 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	4.89696 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	1.28218 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00004 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	0.66310 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	321.93071 (mg/s)
	mass flux of ground water into SW-005	M g5 =	8.03013 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	1.86118 (mg/s)
mass flux of ground water into USGS Gage	M g6 =	1.66263 (mg/s)	
mass flux of surface water into Colby Lake	M scl =	665.55657 (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	4.13888 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.77259 (mg/s)	
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M r1 =	167.8671 (mg/s)
	mass flux in river at SW-002	M r2 =	340.8350 (mg/s)
	mass flux in river at SW-003	M r3 =	450.5791 (mg/s)
	mass flux in river at SW-004	M r4 =	564.8724 (mg/s)
	mass flux in river at SW-004A	M r4A =	1,827.4108 (mg/s)
	mass flux in river at SW-005	M r5 =	2,157.3716 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M r6 =	2,160.8954 (mg/s)
	mass flux into Colby Lake	M cl =	2,831.3635 (mg/s)
	High Flow		
	concentration in river at SW-001	C r1 =	0.06950 (mg/L)
	concentration in river at SW-002	C r2 =	0.06985 (mg/L)
	concentration in river at SW-003	C r3 =	0.06992 (mg/L)
	concentration in river at SW-004	C r4 =	0.07014 (mg/L)
	concentration in river at SW-004A	C r4A =	0.07019 (mg/L)
	concentration in river at SW-005	C r5 =	0.07027 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.07030 (mg/L)
	concentration in Colby Lake (H)	C cl =	0.07181 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 10 Arsenic		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0021 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0021 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0021 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0021 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0021 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0021 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0021 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0021 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0021 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0065 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0022 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0022 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0022 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0022 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0022 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0022 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0022 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0022 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0923 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.7100 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.7100 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.7100 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0377 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0016 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.0027 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0923 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.7100 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_g3LOs =	0.7100 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.7100 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0377 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0016 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0022 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0022 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0022 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.1549 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	5.02604 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.01100 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.18395 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	5.18075 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.01891 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	3.29624 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00640 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00570 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00271 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	3.37103 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.01892 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00271 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00501 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00023 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00338 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)	
mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)	
mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00083 (mg/s)	
mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)	
mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)	
mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)	
mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00022 (mg/s)	
mass flux of surface water into SW-004A	M_s4A =	37.85027 (mg/s)	
mass flux of ground water into SW-004A	M_g4A =	0.08462 (mg/s)	
mass flux of West Pit overflow	M_sms =	#N/A (mg/s)	
mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.07043 (mg/s)	
mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)	
mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.01279 (mg/s)	
mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)	
mass flux of surface water into SW-005	M_s5 =	9.70391 (mg/s)	
mass flux of ground water into SW-005	M_g5 =	0.13876 (mg/s)	
mass flux of surface water into USGS Gage	M_s6 =	0.05610 (mg/s)	
mass flux of ground water into USGS Gage	M_g6 =	0.02873 (mg/s)	
mass flux of surface water into Colby Lake	M_scl =	20.06178 (mg/s)	
mass flux of ground water into Colby Lake	M_gcl =	0.07152 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.02329 (mg/s)	
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	5.2210 (mg/s)
	mass flux in river at SW-002	M_r2 =	10.4207 (mg/s)
	mass flux in river at SW-003	M_r3 =	13.7317 (mg/s)
	mass flux in river at SW-004	M_r4 =	17.1341 (mg/s)
	mass flux in river at SW-004A	M_r4A =	55.1522 (mg/s)
	mass flux in river at SW-005	M_r5 =	64.9948 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	65.0797 (mg/s)
mass flux into Colby Lake	M_cl =	85.2363 (mg/s)	
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C_r1 =	0.00216 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00214 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00213 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00213 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00212 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00212 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00212 (mg/L)
concentration in Colby Lake (H)	C_cl =	0.00215 (mg/L)	



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case		Year 10	
Parameter	Boron		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0450 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0450 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0450 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0450 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0450 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0450 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0450 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0450 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0450 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0960 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0870 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0870 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0870 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0870 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0870 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0870 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0870 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0870 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.3455 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.7600 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.7600 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.7600 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.7600 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0622 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.0370 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.3455 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.7600 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.7600 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.7600 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.7600 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0622 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0870 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0870 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0870 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.3191 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	107.19050 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.44318 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	2.71680 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	110.49003 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.76175 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	70.29897 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.25773 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00610 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00290 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	71.89406 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.76221 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00290 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00537 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00462 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.13461 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.03328 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00003 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00007 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00046 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	807.23320 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	3.40829 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.26369 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.17525 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	206.95546 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	5.58897 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	1.19648 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	1.15719 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	427.85780 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	2.88066 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.49667 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	110.3505 (mg/s)
	mass flux in river at SW-002	M_r2 =	221.6022 (mg/s)
	mass flux in river at SW-003	M_r3 =	292.1679 (mg/s)
	mass flux in river at SW-004	M_r4 =	365.0056 (mg/s)
	mass flux in river at SW-004A	M_r4A =	1.176.0860 (mg/s)
	mass flux in river at SW-005	M_r5 =	1.388.6304 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	1.390.9841 (mg/s)
	mass flux into Colby Lake	M_cl =	1.822.2192 (mg/s)
	High Flow		
	concentration in river at SW-001	C_r1 =	0.04569 (mg/L)
	concentration in river at SW-002	C_r2 =	0.04541 (mg/L)
	concentration in river at SW-003	C_r3 =	0.04533 (mg/L)
	concentration in river at SW-004	C_r4 =	0.04532 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.04517 (mg/L)
	concentration in river at SW-005	C_r5 =	0.04523 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.04525 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.04654 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 10 Barium		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0077 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0077 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0077 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0077 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0077 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0077 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0077 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0077 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0077 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0050 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0219 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0219 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0219 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0219 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0219 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0219 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0219 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0219 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.1900 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.1900 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.1900 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.1900 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.1900 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0168 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.0140 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.1900 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.1900 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.1900 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.1900 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.1900 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0168 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0219 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0219 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0219 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	0.0792 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	18.29384 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.11166 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.14150 (mg/s)
	mass flux of surface water into SW-002	M s2 =	18.85696 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.19193 (mg/s)
	mass flux of surface water into SW-003	M s3 =	11.99769 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.06494 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.00152 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00073 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	12.26992 (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.19204 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00073 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00134 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00116 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.03643 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.00901 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00001 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00002 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00011 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	137.76780 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.85873 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	0.14501 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	0.06631 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	35.32040 (mg/s)
	mass flux of ground water into SW-005	M g5 =	1.40816 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	0.20420 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.29156 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	73.02106 (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	0.72579 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.08476 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M r1 =	18.5470 (mg/s)
	mass flux in river at SW-002	M r2 =	37.5959 (mg/s)
	mass flux in river at SW-003	M r3 =	49.6608 (mg/s)
	mass flux in river at SW-004	M r4 =	62.1715 (mg/s)
	mass flux in river at SW-004A	M r4A =	201.0094 (mg/s)
	mass flux in river at SW-005	M r5 =	237.7379 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M r6 =	238.2337 (mg/s)
	mass flux into Colby Lake	M cl =	312.0653 (mg/s)
	High Flow		
	concentration in river at SW-001	C r1 =	0.00768 (mg/L)
	concentration in river at SW-002	C r2 =	0.00770 (mg/L)
	concentration in river at SW-003	C r3 =	0.00771 (mg/L)
	concentration in river at SW-004	C r4 =	0.00772 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00772 (mg/L)
	concentration in river at SW-005	C r5 =	0.00774 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00775 (mg/L)
	concentration in Colby Lake (H)	C cl =	0.00812 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 10 Beryllium		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0001 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0001 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0001 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0001 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0001 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0001 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0001 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0001 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0001 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0001 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0001 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0001 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0001 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0001 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0001 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0001 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0001 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0001 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0002 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0002 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.0023 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	- (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.0002 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0002 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0023 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	- (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0001 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0001 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0001 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	0.0004 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	0.23820 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.00074 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.00283 (mg/s)
	mass flux of surface water into SW-002	M s2 =	0.24553 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.00127 (mg/s)
	mass flux of surface water into SW-003	M s3 =	0.15622 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.00043 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	0.15976 (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.00127 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	- (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00000 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	1.79385 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.00568 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	0.00015 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	0.45990 (mg/s)
	mass flux of ground water into SW-005	M g5 =	0.00931 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	0.00266 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.00193 (mg/s)
mass flux of surface water into Colby Lake	M scl =	0.95080 (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	0.00480 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.00110 (mg/s)	
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M r1 =	0.2418 (mg/s)
	mass flux in river at SW-002	M r2 =	0.4886 (mg/s)
	mass flux in river at SW-003	M r3 =	0.6452 (mg/s)
	mass flux in river at SW-004	M r4 =	0.8063 (mg/s)
	mass flux in river at SW-004A	M r4A =	2.6060 (mg/s)
	mass flux in river at SW-005	M r5 =	3.0752 (mg/s)
	mass flux in river at USGS Gage	M r6 =	3.0798 (mg/s)
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C r1 =	0.00010 (mg/L)
	concentration in river at SW-002	C r2 =	0.00010 (mg/L)
	concentration in river at SW-003	C r3 =	0.00010 (mg/L)
	concentration in river at SW-004	C r4 =	0.00010 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00010 (mg/L)
	concentration in river at SW-005	C r5 =	0.00010 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00010 (mg/L)
	concentration in Colby Lake (H	C cl =	0.00010 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 10 Calcium		
Input concentration data	concentration of surface water into SW-001	C s1 =	17.0000 (mg/L)
	concentration of surface water into SW-002	C s2 =	17.0000 (mg/L)
	concentration of surface water into SW-003	C s3 =	17.0000 (mg/L)
	concentration of surface water into SW-004	C s4 =	17.0000 (mg/L)
	concentration of surface water into SW-004A	C s4A =	17.0000 (mg/L)
	concentration of surface water into SW-005	C s5 =	17.0000 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	17.0000 (mg/L)
	concentration of surface water into Colby Lake	C scl =	17.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	17.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	24.5000 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	14.7900 (mg/L)
	concentration of ground water into SW-002	C g2 =	14.7900 (mg/L)
	concentration of ground water into SW-003	C g3 =	14.7900 (mg/L)
	concentration of ground water into SW-004	C g4 =	14.7900 (mg/L)
	concentration of ground water into SW-004A	C g4A =	14.7900 (mg/L)
	concentration of ground water into SW-005	C g5 =	14.7900 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	14.7900 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	14.7900 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	478.9266 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	540.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	540.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	540.0000 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	172.3242 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	9.3700 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	15.8000 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	478.9266 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	540.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	540.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	540.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	172.3242 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	9.3700 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	14.7900 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	14.7900 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	14.7900 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	194.2595 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	40,494.18700 (mg/s)
	mass flux of ground water into SW-001	M g1 =	75.34026 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	693.35000 (mg/s)
	mass flux of surface water into SW-002	M s2 =	41,740.67773 (mg/s)
	mass flux of ground water into SW-002	M g2 =	129.49691 (mg/s)
	mass flux of surface water into SW-003	M s3 =	26,557.38902 (mg/s)
	mass flux of ground water into SW-003	M g3 =	43.81436 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	4.33275 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	2.06064 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00044 (mg/s)
	mass flux of surface water into SW-004	M s4 =	27,159.97926 (mg/s)
	mass flux of ground water into SW-004	M g4 =	129.57641 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	2.06064 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	3.81306 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	1.04781 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	20.27794 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00042 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00038 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00023 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	5.01400 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00563 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.01206 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.28188 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	304,954.76287 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	579.40885 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	365.51822 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.01049 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	74.83577 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	78,183.17314 (mg/s)
	mass flux of ground water into SW-005	M g5 =	950.12439 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	452.00197 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	196.72179 (mg/s)
mass flux of surface water into Colby Lake	M scl =	161,635.16700 (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	489.71169 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	187.62900 (mg/s)	
Mass balance at each node			High Flow
	mass flux in river at SW-001	M r1 =	41,262.8773 (mg/s)
	mass flux in river at SW-002	M r2 =	83,133.0519 (mg/s)
	mass flux in river at SW-003	M r3 =	109,740.6491 (mg/s)
	mass flux in river at SW-004	M r4 =	137,062.7192 (mg/s)
	mass flux in river at SW-004A	M r4A =	443,037.2554 (mg/s)
	mass flux in river at SW-005	M r5 =	522,170.5530 (mg/s)
	mass flux in river at USGS Gage	M r6 =	522,819.2767 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M cl =	685,131.7844 (mg/s)
			High Flow
	concentration in river at SW-001	C r1 =	17.08321 (mg/L)
	concentration in river at SW-002	C r2 =	17.03723 (mg/L)
	concentration in river at SW-003	C r3 =	17.02813 (mg/L)
	concentration in river at SW-004	C r4 =	17.01840 (mg/L)
	concentration in river at SW-004A	C r4A =	17.01569 (mg/L)
	concentration in river at SW-005	C r5 =	17.00868 (mg/L)
	concentration in river at USGS Gage	C r6 =	17.00771 (mg/L)
	concentration in Colby Lake (H	C cl =	17.02833 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case		Year 10	
Parameter		Cadmium	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0001 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0001 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0001 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0001 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0001 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0001 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0001 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0001 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0001 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0001 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0001 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0001 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0001 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0001 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0001 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0001 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0001 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0001 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0002 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0002 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0149 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0001 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0002 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0002 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0149 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0001 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0001 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0001 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0001 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0010 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	0.23820 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00051 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.00283 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	0.24553 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.00088 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.15622 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00030 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.15976 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.00088 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00009 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00013 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00003 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00000 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	1.79385 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.00392 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.00014 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	0.45990 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.00642 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.00266 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.00133 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	0.95080 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.00331 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00110 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	0.2415 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.4879 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.6445 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.8054 (mg/s)
	mass flux in river at SW-004A	M_r4A =	2.6033 (mg/s)
	mass flux in river at SW-005	M_r5 =	3.0696 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	3.0736 (mg/s)
	mass flux into Colby Lake	M_cl =	4.0268 (mg/s)
	High Flow		
	concentration in river at SW-001	C_r1 =	0.00010 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00010 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00010 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00010 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00010 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00010 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00010 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.00010 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 10 Chloride		
Input concentration data	concentration of surface water into SW-001	C s1 =	8.0000 (mg/L)
	concentration of surface water into SW-002	C s2 =	8.0000 (mg/L)
	concentration of surface water into SW-003	C s3 =	8.0000 (mg/L)
	concentration of surface water into SW-004	C s4 =	8.0000 (mg/L)
	concentration of surface water into SW-004A	C s4A =	8.0000 (mg/L)
	concentration of surface water into SW-005	C s5 =	8.0000 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	8.0000 (mg/L)
	concentration of surface water into Colby Lake	C scl =	8.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	8.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	1.6000 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	6.6000 (mg/L)
	concentration of ground water into SW-002	C g2 =	6.6000 (mg/L)
	concentration of ground water into SW-003	C g3 =	6.6000 (mg/L)
	concentration of ground water into SW-004	C g4 =	6.6000 (mg/L)
	concentration of ground water into SW-004A	C g4A =	6.6000 (mg/L)
	concentration of ground water into SW-005	C g5 =	6.6000 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	6.6000 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	6.6000 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	49.6586 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	33.6017 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	32.0757 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	2.2763 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.8976 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	5.3500 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	2.3300 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	49.6586 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	33.6017 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	32.0757 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	2.2763 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4Os =	0.8976 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	5.3500 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	6.6000 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	6.6000 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	6.6000 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	30.1422 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	19,056.08800 (mg/s)
	mass flux of ground water into SW-001	M g1 =	33.62040 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	45.28000 (mg/s)
	mass flux of surface water into SW-002	M s2 =	19,642.67187 (mg/s)
	mass flux of ground water into SW-002	M g2 =	57.78767 (mg/s)
	mass flux of surface water into SW-003	M s3 =	12,497.59483 (mg/s)
	mass flux of ground water into SW-003	M g3 =	19.55205 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.26961 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.12240 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00003 (mg/s)
	mass flux of surface water into SW-004	M s4 =	12,781.16671 (mg/s)
	mass flux of ground water into SW-004	M g4 =	57.82314 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.12240 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.01607 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00546 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	11.57812 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00002 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4Os =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	2.86285 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00251 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00538 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.04374 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	143,508.12370 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	258.55973 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	37.89959 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00109 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	11.03591 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	36,792.08148 (mg/s)
	mass flux of ground water into SW-005	M g5 =	423.99060 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	212.70681 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	87.78660 (mg/s)
mass flux of surface water into Colby Lake	M scl =	76,063.60800 (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	218.53260 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	88.29600 (mg/s)	
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M r1 =	19,134.9884 (mg/s)
	mass flux in river at SW-002	M r2 =	38,835.4479 (mg/s)
	mass flux in river at SW-003	M r3 =	51,352.9869 (mg/s)
	mass flux in river at SW-004	M r4 =	64,206.6133 (mg/s)
	mass flux in river at SW-004A	M r4A =	208,022.2333 (mg/s)
	mass flux in river at SW-005	M r5 =	245,238.3054 (mg/s)
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C r1 =	7.92206 (mg/L)
	concentration in river at SW-002	C r2 =	7.95891 (mg/L)
	concentration in river at SW-003	C r3 =	7.96829 (mg/L)
	concentration in river at SW-004	C r4 =	7.97222 (mg/L)
	concentration in river at SW-004A	C r4A =	7.98949 (mg/L)
	concentration in river at SW-005	C r5 =	7.98816 (mg/L)
	concentration in river at USGS Gage	C r6 =	7.98757 (mg/L)
	concentration in Colby Lake (H)	C cl =	7.93005 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case		Year 10	
Parameter	Cobalt		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0005 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0005 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0005 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0005 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0005 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0005 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0005 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0005 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0005 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0005 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0017 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0017 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0017 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0017 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0017 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0017 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0017 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0017 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0140 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0520 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0520 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0520 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	2.0802 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0011 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.0013 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0140 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0520 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0520 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0520 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	2.0802 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0011 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0017 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0017 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0017 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.2634 (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M_s1 =	1.19101 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00841 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.01415 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	1.22767 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.01445 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.78110 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00489 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00042 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00020 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.79882 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.01446 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00020 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00037 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.01265 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00240 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00059 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00038 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	8.96926 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.06464 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.01067 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.00616 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	2.29951 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.10600 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.01329 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.02195 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	4.75398 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.05463 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00552 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	1.2136 (mg/s)
	mass flux in river at SW-002	M_r2 =	2.4567 (mg/s)
	mass flux in river at SW-003	M_r3 =	3.2423 (mg/s)
	mass flux in river at SW-004	M_r4 =	4.0722 (mg/s)
	mass flux in river at SW-004A	M_r4A =	13.1229 (mg/s)
	mass flux in river at SW-005	M_r5 =	15.5284 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	15.5636 (mg/s)
	mass flux into Colby Lake	M_cl =	20.3777 (mg/s)
	High Flow		
	concentration in river at SW-001	C_r1 =	0.00050 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00050 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00050 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00051 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00050 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00051 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00051 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.00054 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 10 Copper		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0017 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0017 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0017 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0017 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0017 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0017 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0017 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0017 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0190 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0012 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0030 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0030 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0030 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0030 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0030 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0030 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0030 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0030 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0920 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0920 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0920 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0920 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.5010 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0214 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.0170 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0920 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0920 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0920 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0920 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.5010 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0214 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0030 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0030 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0030 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.1703 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	4.04942 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.01503 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.03509 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	4.17407 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.02583 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	2.65574 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00874 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00074 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00035 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	2.71600 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.02585 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00035 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00065 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00305 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.04840 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.01147 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00025 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	30.49548 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.11557 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.07021 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.08052 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	7.81832 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.18951 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.04520 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.03924 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	16.16352 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.09768 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.20970 (mg/s)
Mass balance at each node	mass flux in river at SW-001	M_r1 =	4.0995 (mg/s)
	mass flux in river at SW-002	M_r2 =	8.2994 (mg/s)
	mass flux in river at SW-003	M_r3 =	10.9650 (mg/s)
	mass flux in river at SW-004	M_r4 =	13.7690 (mg/s)
	mass flux in river at SW-004A	M_r4A =	44.5308 (mg/s)
	mass flux in river at SW-005	M_r5 =	52.5386 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	52.6231 (mg/s)
	mass flux into Colby Lake	M_cl =	69.0940 (mg/s)
Convert mass flux to concentration	concentration in river at SW-001	C_r1 =	0.00170 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00170 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00170 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00171 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00171 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00171 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00171 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.00179 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case		Year 10	
Parameter	Fluoride		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0700 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0700 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0700 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0700 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0700 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0700 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0700 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0700 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0700 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.1400 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.2800 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.2800 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.2800 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.2800 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.2800 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.2800 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.2800 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.2800 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0622 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0621 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0621 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0621 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0627 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.2239 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.4200 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0622 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0621 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0621 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0621 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0627 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.2239 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.2800 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.2800 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.2800 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.1917 (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M_s1 =	166.74077 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	1.42632 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	3.96200 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	171.87338 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	2.45160 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	109.35395 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.82948 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00050 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00024 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	111.83521 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	2.45310 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00024 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00044 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00038 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.48453 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.11981 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00011 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00023 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00028 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	1,255.69608 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	10.96920 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.04747 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	1.98931 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	321.93071 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	17.98748 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	1.86118 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	3.72428 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	665.55657 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	9.27108 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.77259 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	172.1291 (mg/s)
	mass flux in river at SW-002	M_r2 =	346.4541 (mg/s)
	mass flux in river at SW-003	M_r3 =	456.6382 (mg/s)
	mass flux in river at SW-004	M_r4 =	571.6326 (mg/s)
	mass flux in river at SW-004A	M_r4A =	1,840.2346 (mg/s)
	mass flux in river at SW-005	M_r5 =	2,180.1528 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	2,185.7363 (mg/s)
	mass flux into Colby Lake	M_cl =	2,861.3365 (mg/s)
	High Flow		
	concentration in river at SW-001	C_r1 =	0.07126 (mg/L)
	concentration in river at SW-002	C_r2 =	0.07100 (mg/L)
	concentration in river at SW-003	C_r3 =	0.07086 (mg/L)
	concentration in river at SW-004	C_r4 =	0.07096 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.07068 (mg/L)
	concentration in river at SW-005	C_r5 =	0.07101 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.07110 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.07676 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case		Year 10	
Parameter	Iron		
Input concentration data	concentration of surface water into SW-001	C_s1 =	1.6000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	1.6000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	1.6000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	1.6000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	1.6000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	1.6000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	1.6000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	1.6000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	1.6000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0300 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	2.8440 (mg/L)
	concentration of ground water into SW-002	C_g2 =	2.8440 (mg/L)
	concentration of ground water into SW-003	C_g3 =	2.8440 (mg/L)
	concentration of ground water into SW-004	C_g4 =	2.8440 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	2.8440 (mg/L)
	concentration of ground water into SW-005	C_g5 =	2.8440 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	2.8440 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	2.8440 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.8100 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.8100 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.8100 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.8100 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	235.0000 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.2255 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.1500 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.8100 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.8100 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.8100 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.8100 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	235.0000 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.2255 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	2.8440 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	2.8440 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	2.8440 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	12.0635 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	3,811.21760 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	14.48734 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.84900 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	3,928.53437 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	24.90123 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	2,499.51897 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	8.42516 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00650 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00309 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	2,556.23334 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	24.91652 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00309 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00572 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	1.42891 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.48801 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00031 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.12067 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00108 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00232 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.01750 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	28,701.62474 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	111.41574 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.61819 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00002 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.71047 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	7,358.41630 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	182.70140 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	42.54136 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	37.82804 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	15,212.72160 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	94.16768 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	17.65920 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	3,826.5539 (mg/s)
	mass flux in river at SW-002	M_r2 =	7,779.9895 (mg/s)
	mass flux in river at SW-003	M_r3 =	10,287.9433 (mg/s)
	mass flux in river at SW-004	M_r4 =	12,871.1807 (mg/s)
	mass flux in river at SW-004A	M_r4A =	41,685.5299 (mg/s)
	mass flux in river at SW-005	M_r5 =	49,226.6478 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	49,307.0170 (mg/s)
	mass flux into Colby Lake	M_cl =	64,631.5655 (mg/s)
	High Flow		
	concentration in river at SW-001	C_r1 =	1.58423 (mg/L)
	concentration in river at SW-002	C_r2 =	1.59443 (mg/L)
	concentration in river at SW-003	C_r3 =	1.59635 (mg/L)
	concentration in river at SW-004	C_r4 =	1.59815 (mg/L)
	concentration in river at SW-004A	C_r4A =	1.60101 (mg/L)
	concentration in river at SW-005	C_r5 =	1.60346 (mg/L)
	concentration in river at USGS Gage	C_r6 =	1.60400 (mg/L)
	concentration in Colby Lake (H)	C_cl =	1.62845 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case	Year 10		
Parameter	Hardness		
Input concentration data	concentration of surface water into SW-001	C s1 =	110.0000 (mg/L)
	concentration of surface water into SW-002	C s2 =	110.0000 (mg/L)
	concentration of surface water into SW-003	C s3 =	110.0000 (mg/L)
	concentration of surface water into SW-004	C s4 =	110.0000 (mg/L)
	concentration of surface water into SW-004A	C s4A =	110.0000 (mg/L)
	concentration of surface water into SW-005	C s5 =	110.0000 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	110.0000 (mg/L)
	concentration of surface water into Colby Lake	C scl =	110.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	110.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	110.0000 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	66.4200 (mg/L)
	concentration of ground water into SW-002	C g2 =	66.4200 (mg/L)
	concentration of ground water into SW-003	C g3 =	66.4200 (mg/L)
	concentration of ground water into SW-004	C g4 =	66.4200 (mg/L)
	concentration of ground water into SW-004A	C g4A =	66.4200 (mg/L)
	concentration of ground water into SW-005	C g5 =	66.4200 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	66.4200 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	66.4200 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	1,561.1327 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	1,729.3495 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	1,729.3495 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	1,729.3495 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	1,496.6007 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	43.5200 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	71.5000 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	1,561.1327 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	1,729.3495 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	1,729.3495 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	1,729.3495 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	1,496.6007 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	43.5200 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	66.4200 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	66.4200 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	66.4200 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	742.0281 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	262,021.21000 (mg/s)
	mass flux of ground water into SW-001	M g1 =	338.34348 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	3,113.00000 (mg/s)
	mass flux of surface water into SW-002	M s2 =	270,086.73823 (mg/s)
	mass flux of ground water into SW-002	M g2 =	581.55406 (mg/s)
	mass flux of surface water into SW-003	M s3 =	171,841.92893 (mg/s)
	mass flux of ground water into SW-003	M g3 =	196.76471 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	13.87562 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	6.59921 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00139 (mg/s)
	mass flux of surface water into SW-004	M s4 =	175,741.04226 (mg/s)
	mass flux of ground water into SW-004	M g4 =	581.91110 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	6.59921 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	12.21133 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	9.10001 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	94.18314 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00133 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00121 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00199 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	23.28806 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.02527 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.05414 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00002 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	1.07670 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	##### (mg/s)
	mass flux of ground water into SW-004A	M g4A =	2,602.05112 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	1,191.46106 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.03421 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	338.65554 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	505,891.12035 (mg/s)
	mass flux of ground water into SW-005	M g5 =	4,266.88722 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	2,924.71862 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	883.45242 (mg/s)
mass flux of surface water into Colby Lake	M scl =	##### (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	2,199.23262 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	1,214.07000 (mg/s)	
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M r1 =	265,472.5535 (mg/s)
	mass flux in river at SW-002	M r2 =	536,140.8458 (mg/s)
	mass flux in river at SW-003	M r3 =	708,200.0156 (mg/s)
	mass flux in river at SW-004	M r4 =	884,669.5128 (mg/s)
	mass flux in river at SW-004A	M r4A =	2,862,038.4156 (mg/s)
	mass flux in river at SW-005	M r5 =	3,372,196.4232 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M r6 =	3,376,004.5943 (mg/s)
	mass flux into Colby Lake	M cl =	4,425,292.5069 (mg/s)
	High Flow		
	concentration in river at SW-001	C r1 =	109.90809 (mg/L)
	concentration in river at SW-002	C r2 =	109.87630 (mg/L)
	concentration in river at SW-003	C r3 =	109.88929 (mg/L)
	concentration in river at SW-004	C r4 =	109.84506 (mg/L)
	concentration in river at SW-004A	C r4A =	109.92204 (mg/L)
	concentration in river at SW-005	C r5 =	109.84269 (mg/L)
	concentration in river at USGS Gage	C r6 =	109.82403 (mg/L)
	concentration in Colby Lake (H	C cl =	108.85740 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case		Year 10	
Parameter	Potassium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	1.3000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	1.3000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	1.3000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	1.3000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	1.3000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	1.3000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	1.3000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	1.3000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	1.3000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	2.7000 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	1.7500 (mg/L)
	concentration of ground water into SW-002	C_g2 =	1.7500 (mg/L)
	concentration of ground water into SW-003	C_g3 =	1.7500 (mg/L)
	concentration of ground water into SW-004	C_g4 =	1.7500 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	1.7500 (mg/L)
	concentration of ground water into SW-005	C_g5 =	1.7500 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	1.7500 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	1.7500 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	49.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	49.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	49.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	49.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	38.0000 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	2.2600 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	4.4500 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	49.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	49.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	49.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	49.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	38.0000 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	2.2600 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	1.7500 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	1.7500 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	1.7500 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	17.6277 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	3,096.61430 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	8.91450 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	76.41000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	3,191.93418 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	15.32249 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	2,030.85916 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	5.18426 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.39316 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.18698 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00004 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	2,076.93959 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	15.33189 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.18698 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.34600 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.23106 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	4.89094 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00004 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00003 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00005 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	1.20935 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00067 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00143 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.02558 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	23,320.07010 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	68.55750 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	37.39694 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00107 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	21.07716 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	5,978.71324 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	112.42175 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	34.56486 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	23.27675 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	12,360.33630 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	57.94425 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	14.34810 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	3,181.9388 (mg/s)
	mass flux in river at SW-002	M_r2 =	6,389.1955 (mg/s)
	mass flux in river at SW-003	M_r3 =	8,425.8191 (mg/s)
	mass flux in river at SW-004	M_r4 =	10,524.9827 (mg/s)
	mass flux in river at SW-004A	M_r4A =	33,972.0855 (mg/s)
	mass flux in river at SW-005	M_r5 =	40,063.2205 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	40,121.0621 (mg/s)
	mass flux into Colby Lake	M_cl =	52,553.6908 (mg/s)
	High Flow		
	concentration in river at SW-001	C_r1 =	1.31735 (mg/L)
	concentration in river at SW-002	C_r2 =	1.30940 (mg/L)
	concentration in river at SW-003	C_r3 =	1.30741 (mg/L)
	concentration in river at SW-004	C_r4 =	1.30684 (mg/L)
	concentration in river at SW-004A	C_r4A =	1.30476 (mg/L)
	concentration in river at SW-005	C_r5 =	1.30498 (mg/L)
	concentration in river at USGS Gage	C_r6 =	1.30517 (mg/L)
	concentration in Colby Lake (H)	C_cl =	1.32797 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case		Year 10	
Parameter		Magnesium	
Input concentration data	concentration of surface water into SW-001	C_s1 =	8.0000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	8.0000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	8.0000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	8.0000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	8.0000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	8.0000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	8.0000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	8.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	8.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	10.5000 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	8.0200 (mg/L)
	concentration of ground water into SW-002	C_g2 =	8.0200 (mg/L)
	concentration of ground water into SW-003	C_g3 =	8.0200 (mg/L)
	concentration of ground water into SW-004	C_g4 =	8.0200 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	8.0200 (mg/L)
	concentration of ground water into SW-005	C_g5 =	8.0200 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	8.0200 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	8.0200 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	89.1329 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	93.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	93.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	93.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	259.2481 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	4.8800 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	9.0100 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	89.1329 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	93.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	93.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	93.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	259.2481 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	4.8800 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	8.0200 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	8.0200 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	8.0200 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	62.5945 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	19,056.08800 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	40.85388 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	297.15000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	19,642.67187 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	70.22077 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	12,497.59483 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	23.75870 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.74620 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.35489 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00007 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	12,781.16671 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	70.26388 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.35489 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.65669 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	1.57635 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	10.56098 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00007 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00007 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00035 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	2.61135 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00305 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00654 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.09083 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	143,508.12370 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	314.18925 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	68.02647 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00195 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	42.67533 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	36,792.08148 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	515.21282 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	212.70681 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	106.67402 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	76,063.60800 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	265.55022 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	88.29600 (mg/s)
Mass balance at each node	mass flux in river at SW-001	M_r1 =	19,394.0919 (mg/s)
	mass flux in river at SW-002	M_r2 =	39,106.9845 (mg/s)
	mass flux in river at SW-003	M_r3 =	51,629.4392 (mg/s)
	mass flux in river at SW-004	M_r4 =	64,496.7310 (mg/s)
	mass flux in river at SW-004A	M_r4A =	208,429.7477 (mg/s)
	mass flux in river at SW-005	M_r5 =	245,737.0420 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	246,056.4229 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	322,473.8771 (mg/s)
	concentration in river at SW-001	C_r1 =	8.02933 (mg/L)
	concentration in river at SW-002	C_r2 =	8.01456 (mg/L)
	concentration in river at SW-003	C_r3 =	8.01119 (mg/L)
	concentration in river at SW-004	C_r4 =	8.00824 (mg/L)
	concentration in river at SW-004A	C_r4A =	8.00514 (mg/L)
	concentration in river at SW-005	C_r5 =	8.00440 (mg/L)
	concentration in river at USGS Gage	C_r6 =	8.00441 (mg/L)
	concentration in Colby Lake (H)	C_cl =	8.02258 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case		Year 10	
Parameter	Manganese		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.1500 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.1500 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.1500 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.1500 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.1500 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.1500 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.1500 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.1500 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.1500 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0086 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.1240 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.1240 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.1240 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.1240 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.1240 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.1240 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.1240 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.1240 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.2110 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.7500 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.7500 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.7500 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	5.3242 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.1604 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.1160 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.2110 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.7500 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.7500 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.7500 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	5.3242 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.1604 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.1240 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.1240 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.1240 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.8547 (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M_s1 =	357.30165 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.63166 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.24338 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	368.30010 (mg/s)
	mass flux of surface water into SW-002	M_g2 =	1.08571 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	234.32990 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.36734 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00602 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00286 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	239.64688 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	1.08637 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00286 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00530 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.03237 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.34711 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00001 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.08583 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00005 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00010 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00124 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	2,690.77732 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	4.85779 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.16107 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.54943 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	689.85153 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	7.96588 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	3.98825 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	1.64932 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	1,426.19265 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	4.10576 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	1,65555 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	358.1767 (mg/s)
	mass flux in river at SW-002	M_r2 =	727.5625 (mg/s)
	mass flux in river at SW-003	M_r3 =	962.2686 (mg/s)
	mass flux in river at SW-004	M_r4 =	1,203.4767 (mg/s)
	mass flux in river at SW-004A	M_r4A =	3,899.8223 (mg/s)
	mass flux in river at SW-005	M_r5 =	4,597.6398 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	4,603.2773 (mg/s)
	mass flux into Colby Lake	M_cl =	6,035.2313 (mg/s)
	High Flow		
	concentration in river at SW-001	C_r1 =	0.14829 (mg/L)
	concentration in river at SW-002	C_r2 =	0.14911 (mg/L)
	concentration in river at SW-003	C_r3 =	0.14931 (mg/L)
	concentration in river at SW-004	C_r4 =	0.14943 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.14978 (mg/L)
	concentration in river at SW-005	C_r5 =	0.14976 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.14975 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.14856 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case	Year 10		
Parameter	Sodium		
Input concentration data	concentration of surface water into SW-001	C s1 =	2.5000 (mg/L)
	concentration of surface water into SW-002	C s2 =	2.5000 (mg/L)
	concentration of surface water into SW-003	C s3 =	2.5000 (mg/L)
	concentration of surface water into SW-004	C s4 =	2.5000 (mg/L)
	concentration of surface water into SW-004A	C s4A =	2.5000 (mg/L)
	concentration of surface water into SW-005	C s5 =	2.5000 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	2.5000 (mg/L)
	concentration of surface water into Colby Lake	C scl =	2.5000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	2.5000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	4.8000 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	13.3300 (mg/L)
	concentration of ground water into SW-002	C g2 =	13.3300 (mg/L)
	concentration of ground water into SW-003	C g3 =	13.3300 (mg/L)
	concentration of ground water into SW-004	C g4 =	13.3300 (mg/L)
	concentration of ground water into SW-004A	C g4A =	13.3300 (mg/L)
	concentration of ground water into SW-005	C g5 =	13.3300 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	13.3300 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	13.3300 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	144.1642 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	453.5286 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	526.5464 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	273.1110 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	32.5297 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	4.6000 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	7.1900 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	144.1642 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	453.5286 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	526.5464 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	273.1110 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	32.5297 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	4.6000 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	13.3300 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	13.3300 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	13.3300 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	168.1098 (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M s1 =	5,955.02750 (mg/s)
	mass flux of ground water into SW-001	M g1 =	67.90302 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	135.84000 (mg/s)
	mass flux of surface water into SW-002	M s2 =	6,138.33496 (mg/s)
	mass flux of ground water into SW-002	M g2 =	116.71358 (mg/s)
	mass flux of surface water into SW-003	M s3 =	3,905.49838 (mg/s)
	mass flux of ground water into SW-003	M g3 =	39.48921 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	3.63894 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	2.00930 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00037 (mg/s)
	mass flux of surface water into SW-004	M s4 =	3,994.11460 (mg/s)
	mass flux of ground water into SW-004	M g4 =	116.78523 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	2.00930 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	1.92850 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.19780 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	9.95502 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00041 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00019 (mg/s)
mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00004 (mg/s)	
mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	2.46151 (mg/s)	
mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00507 (mg/s)	
mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.01087 (mg/s)	
mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)	
mass flux of liner leakage from WWTF pond	M gWTFp =	0.24393 (mg/s)	
mass flux of surface water into SW-004A	M s4A =	44,846.28866 (mg/s)	
mass flux of ground water into SW-004A	M g4A =	522.21231 (mg/s)	
mass flux of West Pit overflow	M sms =	#N/A (mg/s)	
mass flux of liner leakage from Cat 1 stockpile	M gC12 =	110.02655 (mg/s)	
mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00316 (mg/s)	
mass flux of seepage from Overburden (Cat 1)	M gO12 =	34.05501 (mg/s)	
mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)	
mass flux of surface water into SW-005	M s5 =	11,497.52546 (mg/s)	
mass flux of ground water into SW-005	M g5 =	856.33253 (mg/s)	
mass flux of surface water into USGS Gage	M s6 =	66.47088 (mg/s)	
mass flux of ground water into USGS Gage	M g6 =	177.30233 (mg/s)	
mass flux of surface water into Colby Lake	M scl =	23,769.87750 (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	441.36963 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	27.59250 (mg/s)	
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M r1 =	6,158.7705 (mg/s)
	mass flux in river at SW-002	M r2 =	12,413.8191 (mg/s)
	mass flux in river at SW-003	M r3 =	16,364.4553 (mg/s)
	mass flux in river at SW-004	M r4 =	20,492.1681 (mg/s)
	mass flux in river at SW-004A	M r4A =	66,004.7538 (mg/s)
	mass flux in river at SW-005	M r5 =	78,358.6118 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M r6 =	78,602.3850 (mg/s)
	mass flux into Colby Lake	M cl =	102,841.2246 (mg/s)
	High Flow		
	concentration in river at SW-001	C r1 =	2.54979 (mg/L)
	concentration in river at SW-002	C r2 =	2.54408 (mg/L)
	concentration in river at SW-003	C r3 =	2.53922 (mg/L)
	concentration in river at SW-004	C r4 =	2.54441 (mg/L)
	concentration in river at SW-004A	C r4A =	2.53504 (mg/L)
	concentration in river at SW-005	C r5 =	2.55238 (mg/L)
	concentration in river at USGS Gage	C r6 =	2.55700 (mg/L)
	concentration in Colby Lake (H)	C cl =	2.85528 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 10 Nickel		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0016 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0016 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0016 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0016 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0016 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0016 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0016 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0016 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0033 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0016 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0163 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0163 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0163 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0163 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0163 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0163 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0163 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0163 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.0910 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.8600 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.8600 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.8600 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	26.9507 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0080 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.0190 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.0910 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.8600 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.8600 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.8600 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	26.9507 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0080 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0163 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0163 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0163 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	3.4148 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	3.71594 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.08293 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.04387 (mg/s)
	mass flux of surface water into SW-002	M s2 =	3.83032 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.14254 (mg/s)
	mass flux of surface water into SW-003	M s3 =	2.43703 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.04823 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep 003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3 003 =	0.00690 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO 003 =	0.00328 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s 003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	2.49233 (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.14263 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep 004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3 004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO 004 =	0.00328 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00607 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.16387 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.01725 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs 004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00004 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.00426 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00001 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00001 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00495 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	27.98408 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.63778 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	0.06947 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	0.08999 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	7.17446 (mg/s)
	mass flux of ground water into SW-005	M g5 =	1.04584 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	0.04148 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.21654 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	14.83240 (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	0.53905 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.03642 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M r1 =	3.8427 (mg/s)
	mass flux in river at SW-002	M r2 =	7.8156 (mg/s)
	mass flux in river at SW-003	M r3 =	10.3110 (mg/s)
	mass flux in river at SW-004	M r4 =	13.1457 (mg/s)
	mass flux in river at SW-004A	M r4A =	41.9271 (mg/s)
	mass flux in river at SW-005	M r5 =	50.1474 (mg/s)
	mass flux in river at USGS Gage	M r6 =	50.4054 (mg/s)
	mass flux into Colby Lake	M cl =	65.8133 (mg/s)
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C r1 =	0.00159 (mg/L)
	concentration in river at SW-002	C r2 =	0.00160 (mg/L)
	concentration in river at SW-003	C r3 =	0.00160 (mg/L)
	concentration in river at SW-004	C r4 =	0.00163 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00161 (mg/L)
	concentration in river at SW-005	C r5 =	0.00163 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00164 (mg/L)
	concentration in Colby Lake (H)	C cl =	0.00205 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 10 Lead		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0005 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0005 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0005 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0005 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0005 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0005 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0005 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0005 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0005 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0002 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0011 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0011 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0011 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0011 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0011 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0011 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0011 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0011 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.0109 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.0167 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0193 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0384 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.0453 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0007 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.0109 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.0167 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.0193 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0384 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0453 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0007 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0011 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0011 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0011 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0148 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	1.19101 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.00571 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.00425 (mg/s)
	mass flux of surface water into SW-002	M s2 =	1.22767 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.00981 (mg/s)
	mass flux of surface water into SW-003	M s3 =	0.78110 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.00332 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.00013 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00007 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	0.79882 (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.00981 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00007 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00027 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00028 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.00146 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.00036 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00002 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	8.96926 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.04388 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	0.00832 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	2.29951 (mg/s)
	mass flux of ground water into SW-005	M g5 =	0.07195 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	0.01329 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.01490 (mg/s)
mass flux of surface water into Colby Lake	M scl =	4.75398 (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	0.03708 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.00552 (mg/s)	
Mass balance at each node			High Flow
	mass flux in river at SW-001	M r1 =	1.2010 (mg/s)
	mass flux in river at SW-002	M r2 =	2.4384 (mg/s)
	mass flux in river at SW-003	M r3 =	3.2231 (mg/s)
	mass flux in river at SW-004	M r4 =	4.0342 (mg/s)
	mass flux in river at SW-004A	M r4A =	13.0556 (mg/s)
	mass flux in river at SW-005	M r5 =	15.4271 (mg/s)
	mass flux in river at USGS Gage	M r6 =	15.4552 (mg/s)
mass flux into Colby Lake	M cl =	20.2518 (mg/s)	
Convert mass flux to concentration			High Flow
	concentration in river at SW-001	C r1 =	0.00050 (mg/L)
	concentration in river at SW-002	C r2 =	0.00050 (mg/L)
	concentration in river at SW-003	C r3 =	0.00050 (mg/L)
	concentration in river at SW-004	C r4 =	0.00050 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00050 (mg/L)
	concentration in river at SW-005	C r5 =	0.00050 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00050 (mg/L)
concentration in Colby Lake (H)	C cl =	0.00052 (mg/L)	



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 10 Antimony		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0015 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0015 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0015 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0015 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0015 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0015 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0015 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0015 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0015 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0015 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0015 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0015 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0015 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0015 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0015 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0015 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0015 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0015 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.0800 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.0800 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0800 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0800 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.0157 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0003 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.0004 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.0800 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.0800 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.0800 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0800 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0157 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0003 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0015 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0015 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0015 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	0.0307 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	3.57302 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.00764 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.04245 (mg/s)
	mass flux of surface water into SW-002	M s2 =	3.68300 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.01313 (mg/s)
	mass flux of surface water into SW-003	M s3 =	2.34330 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.00444 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.00064 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00031 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	2.39647 (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.01314 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00031 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00056 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00010 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.00065 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.00016 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00004 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	26.90777 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.05876 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	0.06106 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	0.00189 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	6.89852 (mg/s)
	mass flux of ground water into SW-005	M g5 =	0.09636 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	0.03988 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.01995 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	14.26193 (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	0.04967 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.01656 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M r1 =	3.6231 (mg/s)
	mass flux in river at SW-002	M r2 =	7.3192 (mg/s)
	mass flux in river at SW-003	M r3 =	9.6679 (mg/s)
	mass flux in river at SW-004	M r4 =	12.0794 (mg/s)
	mass flux in river at SW-004A	M r4A =	39.1089 (mg/s)
	mass flux in river at SW-005	M r5 =	46.1037 (mg/s)
	mass flux in river at USGS Gage	M r6 =	46.1636 (mg/s)
	mass flux into Colby Lake	M cl =	60.4917 (mg/s)
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C r1 =	0.00150 (mg/L)
	concentration in river at SW-002	C r2 =	0.00150 (mg/L)
	concentration in river at SW-003	C r3 =	0.00150 (mg/L)
	concentration in river at SW-004	C r4 =	0.00150 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00150 (mg/L)
	concentration in river at SW-005	C r5 =	0.00150 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00150 (mg/L)
	concentration in Colby Lake (H	C cl =	0.00151 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 10 Selenium		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0005 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0005 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0005 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0005 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0005 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0005 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0005 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0005 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0005 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0005 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0019 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0019 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0019 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0019 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0019 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0019 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0019 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0019 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.0029 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.0029 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0029 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0029 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.0029 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0004 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.0019 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.0029 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.0029 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.0029 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0029 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0029 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0004 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0019 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0019 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0019 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	0.0023 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	1.19101 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.00973 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.01415 (mg/s)
	mass flux of surface water into SW-002	M s2 =	1.22767 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.01672 (mg/s)
	mass flux of surface water into SW-003	M s3 =	0.78110 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.00566 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep 003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3 003 =	0.00002 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO 003 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s 003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	0.79882 (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.01673 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep 004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3 004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO 004 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00002 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00002 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.00096 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs 004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.00024 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00000 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	8.96926 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.07483 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	0.00221 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	0.00900 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	2.29951 (mg/s)
	mass flux of ground water into SW-005	M g5 =	0.12270 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	0.01329 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.02540 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	4.75398 (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	0.06324 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.00552 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M r1 =	1.2149 (mg/s)
	mass flux in river at SW-002	M r2 =	2.4593 (mg/s)
	mass flux in river at SW-003	M r3 =	3.2461 (mg/s)
	mass flux in river at SW-004	M r4 =	4.0629 (mg/s)
	mass flux in river at SW-004A	M r4A =	13.1182 (mg/s)
	mass flux in river at SW-005	M r5 =	15.5404 (mg/s)
	mass flux in river at USGS Gage	M r6 =	15.5791 (mg/s)
	mass flux into Colby Lake	M cl =	20.4018 (mg/s)
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C r1 =	0.00050 (mg/L)
	concentration in river at SW-002	C r2 =	0.00050 (mg/L)
	concentration in river at SW-003	C r3 =	0.00050 (mg/L)
	concentration in river at SW-004	C r4 =	0.00050 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00050 (mg/L)
	concentration in river at SW-005	C r5 =	0.00051 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00051 (mg/L)
	concentration in Colby Lake (H	C cl =	0.00054 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 10 Sulfate		
Input concentration data	concentration of surface water into SW-001	C s1 =	9.0000 (mg/L)
	concentration of surface water into SW-002	C s2 =	9.0000 (mg/L)
	concentration of surface water into SW-003	C s3 =	9.0000 (mg/L)
	concentration of surface water into SW-004	C s4 =	9.0000 (mg/L)
	concentration of surface water into SW-004A	C s4A =	9.0000 (mg/L)
	concentration of surface water into SW-005	C s5 =	9.0000 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	9.0000 (mg/L)
	concentration of surface water into Colby Lake	C scl =	9.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	9.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	22.0000 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	16.1300 (mg/L)
	concentration of ground water into SW-002	C g2 =	16.1300 (mg/L)
	concentration of ground water into SW-003	C g3 =	16.1300 (mg/L)
	concentration of ground water into SW-004	C g4 =	16.1300 (mg/L)
	concentration of ground water into SW-004A	C g4A =	16.1300 (mg/L)
	concentration of ground water into SW-005	C g5 =	16.1300 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	16.1300 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	16.1300 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	352.5133 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	2,340.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	2,340.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	2,340.0000 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	3,327.3624 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	35.1700 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	68.3000 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	352.5133 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	2,340.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	2,340.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	2,340.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	3,327.3624 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	35.1700 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	16.1300 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	16.1300 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	16.1300 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	902.4217 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	21,438.09900 (mg/s)
	mass flux of ground water into SW-001	M g1 =	82.16622 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	622.60000 (mg/s)
	mass flux of surface water into SW-002	M s2 =	22,098.00586 (mg/s)
	mass flux of ground water into SW-002	M g2 =	141.22956 (mg/s)
	mass flux of surface water into SW-003	M s3 =	14,059.79419 (mg/s)
	mass flux of ground water into SW-003	M g3 =	47.78402 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	18.77524 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	8.92945 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00189 (mg/s)
	mass flux of surface water into SW-004	M s4 =	14,378.81255 (mg/s)
	mass flux of ground water into SW-004	M g4 =	141.31626 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	8.92945 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	16.52327 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	20.23187 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	76.11262 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00180 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00164 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00443 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	18.81988 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00614 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.01315 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	1.30944 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	161,446.63916 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	631.90432 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	269.03920 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00772 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	323.49893 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	41,391.09166 (mg/s)
	mass flux of ground water into SW-005	M g5 =	1,036.20733 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	239.29516 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	214.54513 (mg/s)
mass flux of surface water into Colby Lake	M scl =	85,571.55900 (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	534.08043 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	99.33300 (mg/s)	
Mass balance at each node			High Flow
	mass flux in river at SW-001	M r1 =	22,142.8652 (mg/s)
	mass flux in river at SW-002	M r2 =	44,382.1006 (mg/s)
	mass flux in river at SW-003	M r3 =	58,517.3854 (mg/s)
	mass flux in river at SW-004	M r4 =	73,179.4698 (mg/s)
	mass flux in river at SW-004A	M r4A =	235,850.5591 (mg/s)
	mass flux in river at SW-005	M r5 =	278,277.8581 (mg/s)
	mass flux in river at USGS Gage	M r6 =	278,731.6964 (mg/s)
mass flux into Colby Lake	M cl =	364,936.6709 (mg/s)	
Convert mass flux to concentration			High Flow
	concentration in river at SW-001	C r1 =	9.16735 (mg/L)
	concentration in river at SW-002	C r2 =	9.09563 (mg/L)
	concentration in river at SW-003	C r3 =	9.07997 (mg/L)
	concentration in river at SW-004	C r4 =	9.08633 (mg/L)
	concentration in river at SW-004A	C r4A =	9.05829 (mg/L)
	concentration in river at SW-005	C r5 =	9.06436 (mg/L)
	concentration in river at USGS Gage	C r6 =	9.06736 (mg/L)
concentration in Colby Lake (H	C cl =	9.36312 (mg/L)	

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case		Year 10	
Parameter	Thallium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0004 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0004 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0004 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0004 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0004 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0004 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0004 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0004 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0004 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0003 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0000 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0000 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0000 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0000 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0000 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0000 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0000 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0000 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0001 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0000 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0001 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0000 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0000 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0000 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0000 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0011 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	0.95280 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00002 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.00809 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	0.98213 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.00004 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.62488 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00001 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.63906 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.00004 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00009 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00002 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00000 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	7.17541 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.00016 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.00002 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	1.83960 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.00026 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.01064 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.00005 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	3.80318 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.00013 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00441 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	0.9609 (mg/s)
	mass flux in river at SW-002	M_r2 =	1.9431 (mg/s)
	mass flux in river at SW-003	M_r3 =	2.5680 (mg/s)
	mass flux in river at SW-004	M_r4 =	3.2072 (mg/s)
	mass flux in river at SW-004A	M_r4A =	10.3828 (mg/s)
	mass flux in river at SW-005	M_r5 =	12.2226 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	12.2353 (mg/s)
	mass flux into Colby Lake	M_cl =	16.9410 (mg/s)
	High Flow		
	concentration in river at SW-001	C_r1 =	0.00040 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00040 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00040 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00040 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00040 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00040 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00040 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.00039 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case		Year 10	
Parameter		Vanadium	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0009 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0009 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0009 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0009 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0009 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0009 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0009 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0009 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0009 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0043 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0043 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0043 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0043 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0043 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0043 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0043 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0043 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0043 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0543 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.8093 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.9396 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.1071 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0080 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0017 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.0014 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0543 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.8093 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.9396 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.1071 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0080 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0017 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0043 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0043 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0043 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.2651 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	2.14381 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.02190 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.12169 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	2.20980 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.03765 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	1.40598 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.01274 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00649 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00359 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	1.43788 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.03767 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00359 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00076 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00005 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00374 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00093 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00038 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	16.14466 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.16846 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.04147 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.00663 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	4.13911 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.27624 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.02393 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.05719 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	8.55716 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.14238 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00993 (mg/s)
Mass balance at each node	mass flux in river at SW-001	M_r1 =	2.2874 (mg/s)
	mass flux in river at SW-002	M_r2 =	4.5349 (mg/s)
	mass flux in river at SW-003	M_r3 =	5.9637 (mg/s)
	mass flux in river at SW-004	M_r4 =	7.4487 (mg/s)
	mass flux in river at SW-004A	M_r4A =	23.8099 (mg/s)
	mass flux in river at SW-005	M_r5 =	28.2252 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	28.3064 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	37.0158 (mg/s)
	concentration in river at SW-001	C_r1 =	0.00095 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00093 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00093 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00092 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00091 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00092 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00092 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.00103 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case		Year 10	
Parameter	Zinc		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0160 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0160 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0160 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0160 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0160 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0160 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0160 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0160 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0620 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0073 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0275 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0275 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0275 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0275 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0275 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0275 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0275 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0275 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0900 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0900 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0900 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0900 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	26.0000 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0046 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.0030 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0900 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0900 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0900 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0900 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	26.0000 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0046 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0275 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0275 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0275 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	1.2883 (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M_s1 =	38.11218 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.14009 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.20744 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	39.28534 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.24078 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	24.99519 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.08147 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00072 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00034 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	25.56233 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.24093 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00034 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00064 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.15809 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00987 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00003 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00244 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00001 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00002 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00187 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	287.01625 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	1.07733 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.06869 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.01421 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	73.58416 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	1.76663 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.42541 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.36578 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	152.12722 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.91055 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.68429 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	38.4597 (mg/s)
	mass flux in river at SW-002	M_r2 =	77.9858 (mg/s)
	mass flux in river at SW-003	M_r3 =	103.0635 (mg/s)
	mass flux in river at SW-004	M_r4 =	129.0401 (mg/s)
	mass flux in river at SW-004A	M_r4A =	417.2166 (mg/s)
	mass flux in river at SW-005	M_r5 =	492.5674 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	493.3586 (mg/s)
	mass flux into Colby Lake	M_cl =	647.0807 (mg/s)
	High Flow		
	concentration in river at SW-001	C_r1 =	0.01592 (mg/L)
	concentration in river at SW-002	C_r2 =	0.01598 (mg/L)
	concentration in river at SW-003	C_r3 =	0.01599 (mg/L)
	concentration in river at SW-004	C_r4 =	0.01602 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.01602 (mg/L)
	concentration in river at SW-005	C_r5 =	0.01604 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.01605 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.01641 (mg/L)

***Appendix H.11***  
***Partridge River***  
***Reasonable Alternative***  
***Year 12***



## Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

### FLOWS

Case	Year 12		
Flows	Low Flow Conditions (no surface runoff)		
Total flow in Partridge River	flow in river at SW-001	Q_r1_L =	1.18 (cfs)
	flow in river at SW-002	Q_r2_L =	1.49 (cfs)
	flow in river at SW-003	Q_r3_L =	1.59 (cfs)
	flow in river at SW-004	Q_r4_L =	2.00 (cfs)
	flow in river at SW-004A	Q_r4a_L =	3.44 (cfs)
	flow in river at SW-005	Q_r5_L =	5.71 (cfs)
	flow in river at USGS Gage	Q_r6_L =	6.18 (cfs)
	total flow into Colby Lake	Q_cl_L =	7.74 (cfs)
	flow check	Q_ck_L =	7.74 (cfs)
Input flow data	surface water flow into SW-001	Q_s1_L =	- (cfs)
	surface water flow into SW-002	Q_s2_L =	- (cfs)
	surface water flow into SW-003	Q_s3_L =	- (cfs)
	surface water flow into SW-004	Q_s4_L =	- (cfs)
	surface water flow into SW-004A	Q_s4a_L =	- (cfs)
	surface water flow into SW-005	Q_s5_L =	- (cfs)
	surface water flow into USGS Gage	Q_s6_L =	- (cfs)
	surface water flow into Colby Lake	Q_scl_L =	- (cfs)
	surface water inflow from Hoyt Lakes WWTP	Q_shl_L =	0.39 (cfs)
	surface water inflow from discharges upstream of PM-1	Q_sns_L =	1.00 (cfs)
	surface water flow from West Pit overflow	Q_sms_L =	- (cfs)
	ground water flow into SW-001	Q_g1_L =	0.18 (cfs)
	ground water flow into SW-002	Q_g2_L =	0.31 (cfs)
	ground water flow into SW-003	Q_g3_L =	0.11 (cfs)
	ground water flow into SW-004	Q_g4_L =	0.31 (cfs)
	ground water flow into SW-004A	Q_g4a_L =	1.39 (cfs)
	ground water flow into SW-005	Q_g5_L =	2.27 (cfs)
	ground water flow into USGS Gage	Q_g6_L =	0.47 (cfs)
	ground water flow into Colby Lake	Q_gcl_L =	1.17 (cfs)
	ground water seepage from East Pit to SW-003	Q_gep_003_L =	- (cfs)
	ground water seepage from East Pit to SW-004	Q_gep_004_L =	- (cfs)
	ground water seepage from West Pit	Q_gwp_L =	- (cfs)
	ground water liner leakage from Cat 1 stockpile	Q_gC12_L =	0.0067 (cfs)
	ground water liner leakage from Cat 2/3 stockpile to SW-003	Q_gC3_003_L =	0.0000 (cfs)
	ground water liner leakage from Cat 2/3 stockpile to SW-004	Q_gC3_004_L =	- (cfs)
	ground water liner leakage from Cat 3LO stockpile to SW-003	Q_gC3LO_003_L =	0.0000 (cfs)
	ground water liner leakage from Cat 3LO stockpile to SW-004	Q_gC3LO_004_L =	0.0000 (cfs)
	ground water liner leakage from Cat 4 stockpile	Q_gC4_L =	0.0000 (cfs)
	ground water liner leakage from LO SP	Q_gC4LO_L =	0.0000 (cfs)
	ground water seepage from Overburden Storage	Q_gOS_L =	0.0765 (cfs)
	ground water seepage from Overburden (Cat 1)	Q_gO12_L =	0.0457 (cfs)
	ground water liner leakage from Cat 1 sumps	Q_gC12s_L =	0.0000 (cfs)
	ground water liner leakage from Cat 2/3 sumps	Q_gC3s_L =	0.0000 (cfs)
	ground water liner leakage from Cat 3LO sumps	Q_gC3LOs_L =	0.0000 (cfs)
	ground water liner leakage from Cat 4 sumps	Q_gC4s_L =	0.0000 (cfs)
	ground water liner leakage from LO SP sumps	Q_gC4LOs_L =	0.0000 (cfs)
	ground water seepage from Overburden pond - PW1	Q_gOp1_L =	0.0189 (cfs)
	ground water seepage from Overburden pond - PW7	Q_gOp7_L =	- (cfs)
	ground water leakage from Haul Road pond - PW2	Q_gHRp2_L =	0.0000 (cfs)
	ground water leakage from Haul Road pond - PW4	Q_gHRp4_L =	0.0000 (cfs)
	ground water leakage from RTH pond - PW3	Q_gRTHp_L =	0.0000 (cfs)
	ground water liner leakage from WWTF pond	Q_gWTFp_L =	0.0001 (cfs)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 12 Silver			
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0001 (mg/L)	
	concentration of surface water into SW-002	C_s2 =	0.0001 (mg/L)	
	concentration of surface water into SW-003	C_s3 =	0.0001 (mg/L)	
	concentration of surface water into SW-004	C_s4 =	0.0001 (mg/L)	
	concentration of surface water into SW-004A	C_s4A =	0.0001 (mg/L)	
	concentration of surface water into SW-005	C_s5 =	0.0001 (mg/L)	
	concentration of surface water into USGS Gage	C_s6 =	0.0001 (mg/L)	
	concentration of surface water into Colby Lake	C_scl =	0.0001 (mg/L)	
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0001 (mg/L)	
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0001 (mg/L)	
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)	
	concentration of ground water into SW-001	C_g1 =	0.0006 (mg/L)	
	concentration of ground water into SW-002	C_g2 =	0.0006 (mg/L)	
	concentration of ground water into SW-003	C_g3 =	0.0006 (mg/L)	
	concentration of ground water into SW-004	C_g4 =	0.0006 (mg/L)	
	concentration of ground water into SW-004A	C_g4A =	0.0006 (mg/L)	
	concentration of ground water into SW-005	C_g5 =	0.0006 (mg/L)	
	concentration of ground water into USGS Gage	C_g6 =	0.0006 (mg/L)	
	concentration of ground water into Colby Lake	C_gcl =	0.0006 (mg/L)	
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)	
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)	
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0007 (mg/L)	
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0007 (mg/L)	
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0007 (mg/L)	
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0007 (mg/L)	
	concentration of liner leakage from LOSP	C_gC4LO =	0.0007 (mg/L)	
	concentration of seepage from Overburden (Storage)	C_gOS =	- (mg/L)	
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	- (mg/L)	
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0007 (mg/L)	
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0007 (mg/L)	
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0007 (mg/L)	
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0007 (mg/L)	
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0007 (mg/L)	
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	- (mg/L)	
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)	
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0006 (mg/L)	
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0006 (mg/L)	
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0006 (mg/L)	
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0008 (mg/L)	
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	(mg/s)	
	mass flux of ground water into SW-001	M_g1 =	0.00280 (mg/s)	
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.00340 (mg/s)	
	mass flux of surface water into SW-002	M_s2 =	(mg/s)	
	mass flux of ground water into SW-002	M_g2 =	0.00477 (mg/s)	
	mass flux of surface water into SW-003	M_s3 =	(mg/s)	
	mass flux of ground water into SW-003	M_g3 =	0.00165 (mg/s)	
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)	
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00000 (mg/s)	
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00000 (mg/s)	
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)	
	mass flux of surface water into SW-004	M_s4 =	(mg/s)	
	mass flux of ground water into SW-004	M_g4 =	0.00484 (mg/s)	
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)	
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)	
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	(mg/s)	
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00000 (mg/s)	
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00000 (mg/s)	
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00000 (mg/s)	
	mass flux of seepage from Overburden (Storage)	M_gOS =	(mg/s)	
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)	
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)	
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)	
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	(mg/s)	
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)	
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)	
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)	
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00000 (mg/s)	
	mass flux of surface water into SW-004A	M_s4A =	(mg/s)	
	mass flux of ground water into SW-004A	M_g4A =	0.02156 (mg/s)	
	mass flux of West Pit overflow	M_gms =	#N/A (mg/s)	
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.00013 (mg/s)	
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)	
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	(mg/s)	
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)	
	mass flux of surface water into SW-005	M_s5 =	(mg/s)	
	mass flux of ground water into SW-005	M_g5 =	0.03533 (mg/s)	
	mass flux of surface water into USGS Gage	M_s6 =	(mg/s)	
	mass flux of ground water into USGS Gage	M_g6 =	0.00732 (mg/s)	
	mass flux of surface water into Colby Lake	M_scl =	(mg/s)	
	mass flux of ground water into Colby Lake	M_gcl =	0.01821 (mg/s)	
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00110 (mg/s)	
Mass balance at each node	mass flux in river at SW-001	M_r1 =	0.0062 (mg/s)	
	mass flux in river at SW-002	M_r2 =	0.0110 (mg/s)	
	mass flux in river at SW-003	M_r3 =	0.0126 (mg/s)	
	mass flux in river at SW-004	M_r4 =	0.0175 (mg/s)	
	mass flux in river at SW-004A	M_r4A =	0.0392 (mg/s)	
	mass flux in river at SW-005	M_r5 =	0.0745 (mg/s)	
	mass flux in river at USGS Gage	M_r6 =	0.0818 (mg/s)	
mass flux into Colby Lake	M_cl =	0.1011 (mg/s)		
Convert mass flux to concentration	concentration in river at SW-001	C_r1 =	0.00019 (mg/L)	
	concentration in river at SW-002	C_r2 =	0.00026 (mg/L)	
	concentration in river at SW-003	C_r3 =	0.00028 (mg/L)	
	concentration in river at SW-004	C_r4 =	0.00031 (mg/L)	
	concentration in river at SW-004A	C_r4A =	0.00040 (mg/L)	
	concentration in river at SW-005	C_r5 =	0.00046 (mg/L)	
	concentration in river at USGS Gage	C_r6 =	0.00047 (mg/L)	
	concentration in Colby Lake (H)	C_cl =	0.00015 (mg/L)	

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case	Year 12		
Parameter	Aluminum		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0700 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0700 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0700 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0700 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0700 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0700 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0700 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0700 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0700 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0173 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.1250 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.1250 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.1250 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.1250 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.1250 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.1250 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.1250 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.1250 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	1.6800 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	1.6800 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	1.6800 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	1.6800 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	83.0000 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.4106 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.1400 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	1.6800 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	1.6800 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	1.6800 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	1.6800 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	83.0000 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.4106 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.1250 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.1250 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.1250 (mg/L)
concentration of liner leakage from WWTF pond	C gWTFp =	4.9728 (mg/L)	
Low Flow			
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	(mg/s)
	mass flux of ground water into SW-001	M g1 =	0.63675 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.48959 (mg/s)
	mass flux of surface water into SW-002	M s2 =	(mg/s)
	mass flux of ground water into SW-002	M g2 =	1.08447 (mg/s)
	mass flux of surface water into SW-003	M s3 =	(mg/s)
	mass flux of ground water into SW-003	M g3 =	0.37426 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.00158 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00014 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	(mg/s)
	mass flux of ground water into SW-004	M g4 =	1.10073 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	(mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00014 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00026 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.01092 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.88859 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00011 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.21972 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00005 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00010 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00722 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	(mg/s)
	mass flux of ground water into SW-004A	M g4A =	4.90002 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	0.31733 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00004 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	0.18099 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	(mg/s)
	mass flux of ground water into SW-005	M g5 =	8.03013 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	(mg/s)
mass flux of ground water into USGS Gage	M g6 =	1.66263 (mg/s)	
mass flux of surface water into Colby Lake	M scl =	(mg/s)	
mass flux of ground water into Colby Lake	M gcl =	4.13888 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.77259 (mg/s)	
Low Flow			
Mass balance at each node	mass flux in river at SW-001	M r1 =	1.1263 (mg/s)
	mass flux in river at SW-002	M r2 =	2.2108 (mg/s)
	mass flux in river at SW-003	M r3 =	2.5868 (mg/s)
	mass flux in river at SW-004	M r4 =	4.8146 (mg/s)
	mass flux in river at SW-004A	M r4A =	10.2130 (mg/s)
	mass flux in river at SW-005	M r5 =	18.2431 (mg/s)
	mass flux in river at USGS Gage	M r6 =	19.9058 (mg/s)
mass flux into Colby Lake	M cl =	24.8172 (mg/s)	
Low Flow			
Convert mass flux to concentration	concentration in river at SW-001	C r1 =	0.03373 (mg/L)
	concentration in river at SW-002	C r2 =	0.05255 (mg/L)
	concentration in river at SW-003	C r3 =	0.05740 (mg/L)
	concentration in river at SW-004	C r4 =	0.08510 (mg/L)
	concentration in river at SW-004A	C r4A =	0.10501 (mg/L)
	concentration in river at SW-005	C r5 =	0.11296 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.11388 (mg/L)
concentration in Colby Lake (H)	C cl =	0.07633 (mg/L)	

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 12 Arsenic		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0021 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0021 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0021 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0021 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0021 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0021 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0021 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0021 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0021 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sms =	0.0065 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0022 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0022 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0022 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0022 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0022 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0022 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0022 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0022 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.4854 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.7100 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.7100 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.7100 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.2514 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0016 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.0027 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.4854 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.7100 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.7100 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.7100 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.2514 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0016 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0022 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0022 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0022 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.4488 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	(mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.01100 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sms =	0.18395 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	(mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.01874 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	(mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00647 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00067 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00006 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	(mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.01902 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	(mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00006 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00011 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00003 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00338 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00083 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00065 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	(mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.08467 (mg/s)
	mass flux of West Pit overflow	M_gms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.09168 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.00349 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	(mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.13876 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	(mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.02873 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	(mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.07152 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.02329 (mg/s)
Mass balance at each node	mass flux in river at SW-001	M_r1 =	0.1950 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.2137 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.2209 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.2450 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.4248 (mg/s)
	mass flux in river at SW-005	M_r5 =	0.5636 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	0.5923 (mg/s)
mass flux into Colby Lake	M_cl =	0.6871 (mg/s)	
Convert mass flux to concentration	concentration in river at SW-001	C_r1 =	0.00584 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00508 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00490 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00433 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00437 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00349 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00339 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.00226 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 12 Boron		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0450 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0450 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0450 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0450 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0450 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0450 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0450 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0450 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0450 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0960 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0870 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0870 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0870 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0870 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0870 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0870 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0870 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0870 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.7600 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.7600 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.7600 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.7600 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.7600 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0622 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.0370 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.7600 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.7600 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.7600 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.7600 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.7600 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0622 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0870 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0870 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0870 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.5654 (mg/L)
Convert concentration to mass flux			Low Flow
	mass flux of surface water into SW-001	M_s1 =	(mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.44318 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	2.71680 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	(mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.75479 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	(mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.26048 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00071 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00006 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	(mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.76611 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	(mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00006 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00012 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00010 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.13461 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.03328 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00003 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00007 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00082 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	(mg/s)
	mass flux of ground water into SW-004A	M_g4A =	3.41042 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.14355 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00002 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.04783 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	(mg/s)
	mass flux of ground water into SW-005	M_g5 =	5.58897 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	(mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	1.15719 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	(mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	2.88066 (mg/s)
mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.49667 (mg/s)	
Mass balance at each node			Low Flow
	mass flux in river at SW-001	M_r1 =	3.1600 (mg/s)
	mass flux in river at SW-002	M_r2 =	3.9148 (mg/s)
	mass flux in river at SW-003	M_r3 =	4.1760 (mg/s)
	mass flux in river at SW-004	M_r4 =	5.1112 (mg/s)
	mass flux in river at SW-004A	M_r4A =	8.7131 (mg/s)
	mass flux in river at SW-005	M_r5 =	14.3020 (mg/s)
mass flux in river at USGS Gage	M_r6 =	15.4592 (mg/s)	
mass flux into Colby Lake	M_cl =	18.8365 (mg/s)	
Convert mass flux to concentration			Low Flow
	concentration in river at SW-001	C_r1 =	0.09463 (mg/L)
	concentration in river at SW-002	C_r2 =	0.09305 (mg/L)
	concentration in river at SW-003	C_r3 =	0.09267 (mg/L)
	concentration in river at SW-004	C_r4 =	0.09035 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.08959 (mg/L)
	concentration in river at SW-005	C_r5 =	0.08856 (mg/L)
concentration in river at USGS Gage	C_r6 =	0.08844 (mg/L)	
concentration in Colby Lake (H)	C_cl =	0.05098 (mg/L)	

**Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1**

Case Parameter	Year 12 Barium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0077 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0077 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0077 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0077 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0077 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0077 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0077 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0077 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0077 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sms =	0.0050 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0219 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0219 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0219 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0219 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0219 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0219 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0219 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0219 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.1900 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.1900 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.1900 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.1900 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.1900 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0168 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.0140 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.1900 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.1900 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.1900 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.1900 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.1900 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0168 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0219 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0219 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0219 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.1446 (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.11166 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sms =	0.14150 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.19017 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.06563 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00018 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00002 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.19302 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00002 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00003 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00002 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.03643 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00901 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00001 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00002 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00021 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.85927 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.03589 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.01810 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	1.40816 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.29156 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.72579 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.08476 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	0.2532 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.4433 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.5092 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.7479 (mg/s)
	mass flux in river at SW-004A	M_r4A =	1.6612 (mg/s)
	mass flux in river at SW-005	M_r5 =	3.0693 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	3.3609 (mg/s)
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C_r1 =	0.00758 (mg/L)
	concentration in river at SW-002	C_r2 =	0.01054 (mg/L)
	concentration in river at SW-003	C_r3 =	0.01130 (mg/L)
	concentration in river at SW-004	C_r4 =	0.01322 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.01708 (mg/L)
	concentration in river at SW-005	C_r5 =	0.01901 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.01923 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.00934 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 12 Beryllium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0001 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0001 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0001 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0001 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0001 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0001 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0001 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0001 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0001 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sms =	0.0001 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0001 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0001 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0001 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0001 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0001 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0001 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0001 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0001 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0002 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0002 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0023 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	- (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0002 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0002 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0023 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	- (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0001 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0001 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0001 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0004 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	(mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00074 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sms =	0.00283 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	(mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.00126 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	(mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00043 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	(mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.00128 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	(mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	(mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	(mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00000 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	(mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.00568 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.00004 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	(mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	(mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.00931 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	(mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.00193 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	(mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.00480 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00110 (mg/s)
Mass balance at each node	mass flux in river at SW-001	M_r1 =	0.0036 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.0048 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.0053 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.0065 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.0123 (mg/s)
	mass flux in river at SW-005	M_r5 =	0.0216 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	0.0235 (mg/s)
	mass flux into Colby Lake	M_cl =	0.0294 (mg/s)
Convert mass flux to concentration	concentration in river at SW-001	C_r1 =	0.00011 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00011 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00012 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00012 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00013 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00013 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00013 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.00010 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case	Year 12		
Parameter	Calcium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	17.0000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	17.0000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	17.0000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	17.0000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	17.0000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	17.0000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	17.0000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	17.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	17.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sms =	24.5000 (mg/L)
	concentration of surface water flow from West Pit overflow	C_g1 =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g2 =	14.7900 (mg/L)
	concentration of ground water into SW-002	C_g3 =	14.7900 (mg/L)
	concentration of ground water into SW-003	C_g4 =	14.7900 (mg/L)
	concentration of ground water into SW-004	C_g4A =	14.7900 (mg/L)
	concentration of ground water into SW-005	C_g5 =	14.7900 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	14.7900 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	14.7900 (mg/L)
	concentration of ground water seepage from East Pit	C_gwp =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gC12 =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC3 =	540.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3LO =	540.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC4 =	540.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4LO =	480.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gOS =	9.3700 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gO12 =	15.8000 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gC12s =	540.0000 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC3s =	540.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3LOs =	540.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC4s =	540.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4LOs =	480.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gOp1 =	9.3700 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp7 =	#N/A (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gHRp2 =	14.7900 (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp4 =	14.7900 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gRTHp =	14.7900 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gWTFp =	387.6558 (mg/L)
	concentration of liner leakage from WWTF pond		
Low Flow			
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	75.34026 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sms =	693.35000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	128.31472 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	44.28201 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gwp_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.50675 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.04459 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00044 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	130.23821 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gwp_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.04459 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.08250 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.06315 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	20.27794 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00042 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00038 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00064 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	5.01400 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00563 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.01206 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.56250 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	579.77077 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	101.99957 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.01183 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	20.42604 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	950.12439 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	196.72179 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	489.71169 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	187.62900 (mg/s)
Low Flow			
Mass balance at each node	mass flux in river at SW-001	M_r1 =	768.6903 (mg/s)
	mass flux in river at SW-002	M_r2 =	897.0050 (mg/s)
	mass flux in river at SW-003	M_r3 =	941.8388 (mg/s)
	mass flux in river at SW-004	M_r4 =	1,098.1412 (mg/s)
	mass flux in river at SW-004A	M_r4A =	1,800.3494 (mg/s)
	mass flux in river at SW-005	M_r5 =	2,750.4738 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	2,947.1956 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	3,624.5363 (mg/s)
	concentration in river at SW-001	C_r1 =	23.01881 (mg/L)
	concentration in river at SW-002	C_r2 =	21.32184 (mg/L)
	concentration in river at SW-003	C_r3 =	20.89963 (mg/L)
	concentration in river at SW-004	C_r4 =	19.41107 (mg/L)
	concentration in river at SW-004A	C_r4A =	18.51167 (mg/L)
	concentration in river at SW-005	C_r5 =	17.03124 (mg/L)
	concentration in river at USGS Gage	C_r6 =	16.86069 (mg/L)
	concentration in Colby Lake (H)	C_cl =	16.93487 (mg/L)

**Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1**

Case	Year 12		
Parameter	Cadmium		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0001 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0001 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0001 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0001 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0001 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0001 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0001 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0001 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0001 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0001 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0001 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0001 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0001 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0001 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0001 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0001 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0001 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0001 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0002 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0002 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.0149 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0001 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.0002 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0002 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0149 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0001 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0001 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0001 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0001 (mg/L)
	concentration of liner leakage from WWTF pond	C gWTFp =	0.0010 (mg/L)
			Low Flow
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	(mg/s)
	mass flux of ground water into SW-001	M g1 =	0.00051 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.00283 (mg/s)
	mass flux of surface water into SW-002	M s2 =	(mg/s)
	mass flux of ground water into SW-002	M g2 =	0.00087 (mg/s)
	mass flux of surface water into SW-003	M s3 =	(mg/s)
	mass flux of ground water into SW-003	M g3 =	0.00030 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	(mg/s)
	mass flux of ground water into SW-004	M g4 =	0.00088 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	(mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.00013 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.00003 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00000 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	(mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.00392 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	0.00003 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	(mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	(mg/s)
	mass flux of ground water into SW-005	M g5 =	0.00642 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	(mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.00133 (mg/s)
mass flux of surface water into Colby Lake	M scl =	(mg/s)	
mass flux of ground water into Colby Lake	M gcl =	0.00331 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.00110 (mg/s)	
			Low Flow
Mass balance at each node	mass flux in river at SW-001	M r1 =	0.0033 (mg/s)
	mass flux in river at SW-002	M r2 =	0.0042 (mg/s)
	mass flux in river at SW-003	M r3 =	0.0045 (mg/s)
	mass flux in river at SW-004	M r4 =	0.0056 (mg/s)
	mass flux in river at SW-004A	M r4A =	0.0095 (mg/s)
	mass flux in river at SW-005	M r5 =	0.0159 (mg/s)
	mass flux in river at USGS Gage	M r6 =	0.0173 (mg/s)
	mass flux into Colby Lake	M cl =	0.0217 (mg/s)
			Low Flow
Convert mass flux to concentration	concentration in river at SW-001	C r1 =	0.00010 (mg/L)
	concentration in river at SW-002	C r2 =	0.00010 (mg/L)
	concentration in river at SW-003	C r3 =	0.00010 (mg/L)
	concentration in river at SW-004	C r4 =	0.00010 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00010 (mg/L)
	concentration in river at SW-005	C r5 =	0.00010 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00010 (mg/L)
	concentration in Colby Lake (H)	C cl =	0.00010 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case	Year 12		
Parameter	Chloride		
Input concentration data	concentration of surface water into SW-001	C_s1 =	8.0000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	8.0000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	8.0000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	8.0000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	8.0000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	8.0000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	8.0000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	8.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	8.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	1.6000 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	6.6000 (mg/L)
	concentration of ground water into SW-002	C_g2 =	6.6000 (mg/L)
	concentration of ground water into SW-003	C_g3 =	6.6000 (mg/L)
	concentration of ground water into SW-004	C_g4 =	6.6000 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	6.6000 (mg/L)
	concentration of ground water into SW-005	C_g5 =	6.6000 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	6.6000 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	6.6000 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	136.3837 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	83.5945 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	79.7982 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	5.6630 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	2.2331 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	5.3500 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	2.3300 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	136.3837 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	83.5945 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	79.7982 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	5.6630 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	2.2331 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	5.3500 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	6.6000 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	6.6000 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	6.6000 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	30.1422 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	(mg/s)
	mass flux of ground water into SW-001	M_g1 =	33.62040 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	45.28000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	57.26012 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	19.76074 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.07845 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00659 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00007 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	58.11847 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00659 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00087 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00029 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	11.57812 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00006 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	2.86285 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00261 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00538 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.04374 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	258.72124 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	25.76125 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00299 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	3.01219 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	423.99060 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	87.78660 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	218.53260 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	88.29600 (mg/s)
Mass balance at each node	mass flux in river at SW-001	M_r1 =	78.9004 (mg/s)
	mass flux in river at SW-002	M_r2 =	136.1605 (mg/s)
	mass flux in river at SW-003	M_r3 =	156.0064 (mg/s)
	mass flux in river at SW-004	M_r4 =	228.6253 (mg/s)
	mass flux in river at SW-004A	M_r4A =	516.1230 (mg/s)
	mass flux in river at SW-005	M_r5 =	940.1136 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	1,027.9002 (mg/s)
	mass flux into Colby Lake	M_cl =	1,334.7288 (mg/s)
Convert mass flux to concentration	concentration in river at SW-001	C_r1 =	2.36271 (mg/L)
	concentration in river at SW-002	C_r2 =	3.23654 (mg/L)
	concentration in river at SW-003	C_r3 =	3.46182 (mg/L)
	concentration in river at SW-004	C_r4 =	4.04125 (mg/L)
	concentration in river at SW-004A	C_r4A =	5.30691 (mg/L)
	concentration in river at SW-005	C_r5 =	5.82129 (mg/L)
	concentration in river at USGS Gage	C_r6 =	5.88054 (mg/L)
	concentration in Colby Lake (H)	C_cl =	7.72156 (mg/L)

**Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1**

Case Parameter	Year 12 Cobalt		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0005 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0005 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0005 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0005 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0005 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0005 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0005 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0005 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0005 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sms =	0.0005 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0017 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0017 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0017 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0017 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0017 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0017 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0017 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0017 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0520 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0520 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0520 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0520 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	13.8740 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0011 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.0013 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0520 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0520 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0520 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0520 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	13.8740 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0011 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0017 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0017 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0017 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.2812 (mg/L)
Convert concentration to mass flux			Low Flow
	mass flux of surface water into SW-001	M_s1 =	(mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00841 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sms =	0.01415 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	(mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.01432 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	(mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00494 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00005 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	(mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.01453 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	(mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00001 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00183 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00240 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00002 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00059 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00041 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	(mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.06468 (mg/s)
	mass flux of West Pit overflow	M_gms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.00982 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.00168 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	(mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.10600 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	(mg/s)
mass flux of ground water into USGS Gage	M_g6 =	0.02195 (mg/s)	
mass flux of surface water into Colby Lake	M_scl =	(mg/s)	
mass flux of ground water into Colby Lake	M_gcl =	0.05463 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00552 (mg/s)	
Mass balance at each node			Low Flow
	mass flux in river at SW-001	M_r1 =	0.0226 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.0369 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.0419 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.0617 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.1378 (mg/s)
	mass flux in river at SW-005	M_r5 =	0.2438 (mg/s)
mass flux in river at USGS Gage	M_r6 =	0.2658 (mg/s)	
mass flux into Colby Lake	M_cl =	0.3259 (mg/s)	
Convert mass flux to concentration			Low Flow
	concentration in river at SW-001	C_r1 =	0.00068 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00088 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00093 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00109 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00142 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00151 (mg/L)
concentration in river at USGS Gage	C_r6 =	0.00152 (mg/L)	
concentration in Colby Lake (H)	C_cl =	0.00064 (mg/L)	

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case	Year 12		
Parameter	Copper		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0017 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0017 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0017 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0017 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0017 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0017 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0017 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0017 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0190 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0012 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0030 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0030 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0030 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0030 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0030 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0030 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0030 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0030 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.0920 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.0920 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0920 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0920 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	3.3413 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0214 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.0170 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.0920 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.0920 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.0920 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0920 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	3.3413 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0214 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0030 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0030 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0030 (mg/L)
	concentration of liner leakage from WWTF pond	C gWTFp =	0.2233 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 12 Fluoride		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0700 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0700 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0700 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0700 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0700 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0700 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0700 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0700 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0700 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.1400 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.2800 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.2800 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.2800 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.2800 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.2800 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.2800 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.2800 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.2800 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0621 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0621 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0621 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0621 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0623 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.2239 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.4200 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0621 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0621 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0621 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0621 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0623 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.2239 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.2800 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.2800 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.2800 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.1917 (mg/L)
Convert concentration to mass flux			Low Flow
	mass flux of surface water into SW-001	M_s1 =	(mg/s)
	mass flux of ground water into SW-001	M_g1 =	1.42632 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	3.96200 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	(mg/s)
	mass flux of ground water into SW-002	M_g2 =	2.42922 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	(mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.83833 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00006 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	(mg/s)
	mass flux of ground water into SW-004	M_g4 =	2.46563 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	(mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00001 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.48453 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.11981 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00011 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00023 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00028 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	(mg/s)
	mass flux of ground water into SW-004A	M_g4A =	10.97605 (mg/s)
	mass flux of West Pit overflow	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.01173 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.54297 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	(mg/s)
	mass flux of ground water into SW-005	M_g5 =	17.98748 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	(mg/s)
mass flux of ground water into USGS Gage	M_g6 =	3.72428 (mg/s)	
mass flux of surface water into Colby Lake	M_scl =	(mg/s)	
mass flux of ground water into Colby Lake	M_gcl =	9.27108 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.77259 (mg/s)	
Mass balance at each node			Low Flow
	mass flux in river at SW-001	M_r1 =	5.3883 (mg/s)
	mass flux in river at SW-002	M_r2 =	7.8175 (mg/s)
	mass flux in river at SW-003	M_r3 =	8.6559 (mg/s)
	mass flux in river at SW-004	M_r4 =	11.7265 (mg/s)
	mass flux in river at SW-004A	M_r4A =	23.2573 (mg/s)
	mass flux in river at SW-005	M_r5 =	41.2448 (mg/s)
mass flux in river at USGS Gage	M_r6 =	44.9690 (mg/s)	
mass flux into Colby Lake	M_cl =	55.0127 (mg/s)	
Convert mass flux to concentration			Low Flow
	concentration in river at SW-001	C_r1 =	0.16136 (mg/L)
	concentration in river at SW-002	C_r2 =	0.18582 (mg/L)
	concentration in river at SW-003	C_r3 =	0.19208 (mg/L)
	concentration in river at SW-004	C_r4 =	0.20728 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.23914 (mg/L)
	concentration in river at SW-005	C_r5 =	0.25539 (mg/L)
concentration in river at USGS Gage	C_r6 =	0.25726 (mg/L)	
concentration in Colby Lake (H)	C_cl =	0.09648 (mg/L)	

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case	Year 12		
Parameter	Iron		
Input concentration data	concentration of surface water into SW-001	C s1 =	1.6000 (mg/L)
	concentration of surface water into SW-002	C s2 =	1.6000 (mg/L)
	concentration of surface water into SW-003	C s3 =	1.6000 (mg/L)
	concentration of surface water into SW-004	C s4 =	1.6000 (mg/L)
	concentration of surface water into SW-004A	C s4A =	1.6000 (mg/L)
	concentration of surface water into SW-005	C s5 =	1.6000 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	1.6000 (mg/L)
	concentration of surface water into Colby Lake	C scl =	1.6000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	1.6000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0300 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	2.8440 (mg/L)
	concentration of ground water into SW-002	C g2 =	2.8440 (mg/L)
	concentration of ground water into SW-003	C g3 =	2.8440 (mg/L)
	concentration of ground water into SW-004	C g4 =	2.8440 (mg/L)
	concentration of ground water into SW-004A	C g4A =	2.8440 (mg/L)
	concentration of ground water into SW-005	C g5 =	2.8440 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	2.8440 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	2.8440 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.8100 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.8100 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.8100 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.8100 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	235.0000 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.2255 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.1500 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.8100 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.8100 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.8100 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.8100 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	235.0000 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.2255 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	2.8440 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	2.8440 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	2.8440 (mg/L)
	concentration of liner leakage from WWTF pond	C gWTFp =	12.0635 (mg/L)
Low Flow			
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	(mg/s)
	mass flux of ground water into SW-001	M g1 =	14.48734 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.84900 (mg/s)
	mass flux of surface water into SW-002	M s2 =	(mg/s)
	mass flux of ground water into SW-002	M g2 =	24.67391 (mg/s)
	mass flux of surface water into SW-003	M s3 =	(mg/s)
	mass flux of ground water into SW-003	M g3 =	8.51508 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.00076 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00007 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	(mg/s)
	mass flux of ground water into SW-004	M g4 =	25.04378 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	(mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00007 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00012 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.03092 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.48801 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00031 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.12067 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00108 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00232 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.01750 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	(mg/s)
	mass flux of ground water into SW-004A	M g4A =	111.48533 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	0.15300 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00002 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	0.19392 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	(mg/s)
	mass flux of ground water into SW-005	M g5 =	182.70140 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	(mg/s)
	mass flux of ground water into USGS Gage	M g6 =	37.82804 (mg/s)
mass flux of surface water into Colby Lake	M scl =	(mg/s)	
mass flux of ground water into Colby Lake	M gcl =	94.16768 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	17.65920 (mg/s)	
Low Flow			
Mass balance at each node	mass flux in river at SW-001	M r1 =	15.3363 (mg/s)
	mass flux in river at SW-002	M r2 =	40.0102 (mg/s)
	mass flux in river at SW-003	M r3 =	48.5261 (mg/s)
	mass flux in river at SW-004	M r4 =	74.2309 (mg/s)
	mass flux in river at SW-004A	M r4A =	186.0632 (mg/s)
	mass flux in river at SW-005	M r5 =	368.7646 (mg/s)
	mass flux in river at USGS Gage	M r6 =	406.5927 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M cl =	518.4195 (mg/s)
	concentration in river at SW-001	C r1 =	0.45925 (mg/L)
	concentration in river at SW-002	C r2 =	0.95104 (mg/L)
	concentration in river at SW-003	C r3 =	1.07681 (mg/L)
	concentration in river at SW-004	C r4 =	1.31213 (mg/L)
	concentration in river at SW-004A	C r4A =	1.91315 (mg/L)
	concentration in river at SW-005	C r5 =	2.28343 (mg/L)
	concentration in river at USGS Gage	C r6 =	2.32609 (mg/L)
	concentration in Colby Lake (H)	C cl =	1.71177 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 12 Hardness		
Input concentration data	concentration of surface water into SW-001	C_s1 =	110.0000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	110.0000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	110.0000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	110.0000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	110.0000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	110.0000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	110.0000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	110.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	110.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	110.0000 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	66.4200 (mg/L)
	concentration of ground water into SW-002	C_g2 =	66.4200 (mg/L)
	concentration of ground water into SW-003	C_g3 =	66.4200 (mg/L)
	concentration of ground water into SW-004	C_g4 =	66.4200 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	66.4200 (mg/L)
	concentration of ground water into SW-005	C_g5 =	66.4200 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	66.4200 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	66.4200 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	1,729.3495 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	1,729.3495 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	1,729.3495 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	1,729.3495 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	5,435.6906 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	43.5200 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	71.5000 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	1,729.3495 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	1,729.3495 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	1,729.3495 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	1,729.3495 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	5,435.6906 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	43.5200 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	66.4200 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	66.4200 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	66.4200 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	1,352.5993 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	(mg/s)
	mass flux of ground water into SW-001	M_g1 =	338.34348 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	3,113.00000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	576.24500 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	198.86487 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	1.62288 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.14279 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00139 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	584.88314 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.14279 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.26422 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.71515 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	94.18314 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00133 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00121 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00724 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	23.28806 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.02527 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.05414 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00002 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	1.96265 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	2,603.67646 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	326.65351 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.03789 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	92.43429 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	4,266.88722 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	883.45242 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	2,199.23262 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	1,214.07000 (mg/s)
Mass balance at each node	mass flux in river at SW-001	M_r1 =	3,451.3435 (mg/s)
	mass flux in river at SW-002	M_r2 =	4,027.5885 (mg/s)
	mass flux in river at SW-003	M_r3 =	4,228.2204 (mg/s)
	mass flux in river at SW-004	M_r4 =	4,933.7502 (mg/s)
	mass flux in river at SW-004A	M_r4A =	7,956.5523 (mg/s)
	mass flux in river at SW-005	M_r5 =	12,223.4396 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	13,106.8920 (mg/s)
	mass flux into Colby Lake	M_cl =	16,520.1946 (mg/s)
Convert mass flux to concentration	concentration in river at SW-001	C_r1 =	103.35220 (mg/L)
	concentration in river at SW-002	C_r2 =	95.73592 (mg/L)
	concentration in river at SW-003	C_r3 =	93.82625 (mg/L)
	concentration in river at SW-004	C_r4 =	87.21043 (mg/L)
	concentration in river at SW-004A	C_r4A =	81.81139 (mg/L)
	concentration in river at SW-005	C_r5 =	75.68889 (mg/L)
	concentration in river at USGS Gage	C_r6 =	74.98358 (mg/L)
	concentration in Colby Lake (H)	C_cl =	104.95654 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case	Year 12		
Parameter	Potassium		
Input concentration data	concentration of surface water into SW-001	C s1 =	1.3000 (mg/L)
	concentration of surface water into SW-002	C s2 =	1.3000 (mg/L)
	concentration of surface water into SW-003	C s3 =	1.3000 (mg/L)
	concentration of surface water into SW-004	C s4 =	1.3000 (mg/L)
	concentration of surface water into SW-004A	C s4A =	1.3000 (mg/L)
	concentration of surface water into SW-005	C s5 =	1.3000 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	1.3000 (mg/L)
	concentration of surface water into Colby Lake	C scl =	1.3000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	1.3000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	2.7000 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	1.7500 (mg/L)
	concentration of ground water into SW-002	C g2 =	1.7500 (mg/L)
	concentration of ground water into SW-003	C g3 =	1.7500 (mg/L)
	concentration of ground water into SW-004	C g4 =	1.7500 (mg/L)
	concentration of ground water into SW-004A	C g4A =	1.7500 (mg/L)
	concentration of ground water into SW-005	C g5 =	1.7500 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	1.7500 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	1.7500 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	49.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	49.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	49.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	49.0000 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	38.0000 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	2.2600 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	4.4500 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	49.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	49.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	49.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	49.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	38.0000 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	2.2600 (mg/L)
	concentration of seep from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	1.7500 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	1.7500 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	1.7500 (mg/L)
concentration of liner leakage from WWTF pond	C gWTFp =	35.4703 (mg/L)	
			Low Flow
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	(mg/s)
	mass flux of ground water into SW-001	M g1 =	8.91450 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	76.41000 (mg/s)
	mass flux of surface water into SW-002	M s2 =	(mg/s)
	mass flux of ground water into SW-002	M g2 =	15.18261 (mg/s)
	mass flux of surface water into SW-003	M s3 =	(mg/s)
	mass flux of ground water into SW-003	M g3 =	5.23959 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.04598 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00405 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00004 (mg/s)
	mass flux of surface water into SW-004	M s4 =	(mg/s)
	mass flux of ground water into SW-004	M g4 =	15.41020 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	(mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00405 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00749 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00500 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	4.89094 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00004 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00003 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00005 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	1.20935 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00067 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00143 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.05147 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	(mg/s)
	mass flux of ground water into SW-004A	M g4A =	68.60033 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	9.25552 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00107 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	5.75290 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	(mg/s)
	mass flux of ground water into SW-005	M g5 =	112.42175 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	(mg/s)
	mass flux of ground water into USGS Gage	M g6 =	23.27675 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	(mg/s)
	mass flux of ground water into Colby Lake	M gcl =	57.94425 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl =	14.34810 (mg/s)
			Low Flow
Mass balance at each node	mass flux in river at SW-001	M r1 =	85.3245 (mg/s)
	mass flux in river at SW-002	M r2 =	100.5071 (mg/s)
	mass flux in river at SW-003	M r3 =	105.7968 (mg/s)
	mass flux in river at SW-004	M r4 =	127.3775 (mg/s)
	mass flux in river at SW-004A	M r4A =	210.9873 (mg/s)
	mass flux in river at SW-005	M r5 =	323.4091 (mg/s)
	mass flux in river at USGS Gage	M r6 =	346.6858 (mg/s)
mass flux into Colby Lake	M cl =	418.9782 (mg/s)	
			Low Flow
Convert mass flux to concentration	concentration in river at SW-001	C r1 =	2.55508 (mg/L)
	concentration in river at SW-002	C r2 =	2.38906 (mg/L)
	concentration in river at SW-003	C r3 =	2.34766 (mg/L)
	concentration in river at SW-004	C r4 =	2.25156 (mg/L)
	concentration in river at SW-004A	C r4A =	2.16943 (mg/L)
	concentration in river at SW-005	C r5 =	2.00258 (mg/L)
	concentration in river at USGS Gage	C r6 =	1.98336 (mg/L)
	concentration in Colby Lake (H)	C cl =	1.38993 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case	Year 12		
Parameter	Magnesium		
Input concentration data	concentration of surface water into SW-001	C s1 =	8.0000 (mg/L)
	concentration of surface water into SW-002	C s2 =	8.0000 (mg/L)
	concentration of surface water into SW-003	C s3 =	8.0000 (mg/L)
	concentration of surface water into SW-004	C s4 =	8.0000 (mg/L)
	concentration of surface water into SW-004A	C s4A =	8.0000 (mg/L)
	concentration of surface water into SW-005	C s5 =	8.0000 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	8.0000 (mg/L)
	concentration of surface water into Colby Lake	C scl =	8.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	8.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	10.5000 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	8.0200 (mg/L)
	concentration of ground water into SW-002	C g2 =	8.0200 (mg/L)
	concentration of ground water into SW-003	C g3 =	8.0200 (mg/L)
	concentration of ground water into SW-004	C g4 =	8.0200 (mg/L)
	concentration of ground water into SW-004A	C g4A =	8.0200 (mg/L)
	concentration of ground water into SW-005	C g5 =	8.0200 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	8.0200 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	8.0200 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	93.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	93.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	93.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	93.0000 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	1,030.0000 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	4.8800 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	9.0100 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	93.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	93.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	93.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	93.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	1,030.0000 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	4.8800 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	8.0200 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	8.0200 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	8.0200 (mg/L)
	concentration of liner leakage from WWTF pond	C gWTFp =	93.7680 (mg/L)
Low Flow			
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	(mg/s)
	mass flux of ground water into SW-001	M g1 =	40.85388 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	297.15000 (mg/s)
	mass flux of surface water into SW-002	M s2 =	(mg/s)
	mass flux of ground water into SW-002	M g2 =	69.57972 (mg/s)
	mass flux of surface water into SW-003	M s3 =	(mg/s)
	mass flux of ground water into SW-003	M g3 =	24.01229 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.08727 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00768 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00007 (mg/s)
	mass flux of surface water into SW-004	M s4 =	(mg/s)
	mass flux of ground water into SW-004	M g4 =	70.62275 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	(mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00768 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.01421 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.13551 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	10.56098 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00007 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00007 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00137 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	2.61135 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00305 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00654 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.13606 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	(mg/s)
	mass flux of ground water into SW-004A	M g4A =	314.38550 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	17.56659 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00204 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	11.64801 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	(mg/s)
	mass flux of ground water into SW-005	M g5 =	515.21282 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	(mg/s)
	mass flux of ground water into USGS Gage	M g6 =	106.67402 (mg/s)
mass flux of surface water into Colby Lake	M scl =	(mg/s)	
mass flux of ground water into Colby Lake	M gcl =	265.55022 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	88.29600 (mg/s)	
Low Flow			
Mass balance at each node	mass flux in river at SW-001	M r1 =	338.0039 (mg/s)
	mass flux in river at SW-002	M r2 =	407.5836 (mg/s)
	mass flux in river at SW-003	M r3 =	431.6909 (mg/s)
	mass flux in river at SW-004	M r4 =	515.7906 (mg/s)
	mass flux in river at SW-004A	M r4A =	859.3928 (mg/s)
	mass flux in river at SW-005	M r5 =	1,374.6056 (mg/s)
	mass flux in river at USGS Gage	M r6 =	1,481.2796 (mg/s)
	mass flux into Colby Lake	M cl =	1,835.1258 (mg/s)
Low Flow			
Convert mass flux to concentration	concentration in river at SW-001	C r1 =	10.12169 (mg/L)
	concentration in river at SW-002	C r2 =	9.68828 (mg/L)
	concentration in river at SW-003	C r3 =	9.57933 (mg/L)
	concentration in river at SW-004	C r4 =	9.11727 (mg/L)
	concentration in river at SW-004A	C r4A =	8.83651 (mg/L)
	concentration in river at SW-005	C r5 =	8.51171 (mg/L)
	concentration in river at USGS Gage	C r6 =	8.47429 (mg/L)
	concentration in Colby Lake (H)	C cl =	8.05580 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case	Year 12		
Parameter	Manganese		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.1500 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.1500 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.1500 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.1500 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.1500 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.1500 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.1500 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.1500 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.1500 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0086 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.1240 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.1240 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.1240 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.1240 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.1240 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.1240 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.1240 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.1240 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.7500 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.7500 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.7500 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.7500 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	35.5100 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.1604 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.1160 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.7500 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.7500 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_g3LOs =	0.7500 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.7500 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	35.5100 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.1604 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.1240 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.1240 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.1240 (mg/L)
concentration of liner leakage from WWTF pond	C_gWTFp =	1.1341 (mg/L)	
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	(mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.63166 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.24338 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	1.07580 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.37126 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gwp_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00070 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00006 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	1.09192 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gwp_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00006 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00011 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00467 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.34711 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00005 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.08583 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00005 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00010 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00165 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	4.86082 (mg/s)
	mass flux of West Pit overflow	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.14167 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00002 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.14996 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	7.96588 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	1.64932 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	4.10576 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	1.65555 (mg/s)
Mass balance at each node	mass flux in river at SW-001	M_r1 =	0.8750 (mg/s)
	mass flux in river at SW-002	M_r2 =	1.9508 (mg/s)
	mass flux in river at SW-003	M_r3 =	2.3229 (mg/s)
	mass flux in river at SW-004	M_r4 =	3.8544 (mg/s)
	mass flux in river at SW-004A	M_r4A =	9.0069 (mg/s)
	mass flux in river at SW-005	M_r5 =	16.9728 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	18.6221 (mg/s)
mass flux into Colby Lake	M_cl =	24.3834 (mg/s)	
Convert mass flux to concentration	concentration in river at SW-001	C_r1 =	0.02620 (mg/L)
	concentration in river at SW-002	C_r2 =	0.04637 (mg/L)
	concentration in river at SW-003	C_r3 =	0.05154 (mg/L)
	concentration in river at SW-004	C_r4 =	0.06813 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.09261 (mg/L)
	concentration in river at SW-005	C_r5 =	0.10510 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.10654 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.14436 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 12 Sodium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	2.5000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	2.5000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	2.5000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	2.5000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	2.5000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	2.5000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	2.5000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	2.5000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	2.5000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	4.8000 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	13.3300 (mg/L)
	concentration of ground water into SW-002	C_g2 =	13.3300 (mg/L)
	concentration of ground water into SW-003	C_g3 =	13.3300 (mg/L)
	concentration of ground water into SW-004	C_g4 =	13.3300 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	13.3300 (mg/L)
	concentration of ground water into SW-005	C_g5 =	13.3300 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	13.3300 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	13.3300 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	681.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	681.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	681.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	681.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	216.9569 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	4.6000 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	7.1900 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	681.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	681.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	681.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	681.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	216.9569 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	4.6000 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	13.3300 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	13.3300 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	13.3300 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	461.0094 (mg/L)
Convert concentration to mass flux			Low Flow
	mass flux of surface water into SW-001	M_s1 =	(mg/s)
	mass flux of ground water into SW-001	M_g1 =	67.90302 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	135.84000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	(mg/s)
	mass flux of ground water into SW-002	M_g2 =	115.64809 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	(mg/s)
	mass flux of ground water into SW-003	M_g3 =	39.91070 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.63907 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.05623 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00055 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	(mg/s)
	mass flux of ground water into SW-004	M_g4 =	117.38170 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	(mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.05623 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.10405 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.02854 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	9.95502 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00053 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00048 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00029 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	2.46151 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00507 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.01087 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.66894 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	(mg/s)
	mass flux of ground water into SW-004A	M_g4A =	522.53850 (mg/s)
	mass flux of West Pit overflow	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	128.63279 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.01492 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	9.29514 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	(mg/s)
	mass flux of ground water into SW-005	M_g5 =	856.33253 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	(mg/s)
mass flux of ground water into USGS Gage	M_g6 =	177.30233 (mg/s)	
mass flux of surface water into Colby Lake	M_scl =	(mg/s)	
mass flux of ground water into Colby Lake	M_gcl =	441.36963 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M_shl =	27.59250 (mg/s)	
Mass balance at each node			Low Flow
	mass flux in river at SW-001	M_r1 =	203.7430 (mg/s)
	mass flux in river at SW-002	M_r2 =	319.3911 (mg/s)
	mass flux in river at SW-003	M_r3 =	359.9977 (mg/s)
	mass flux in river at SW-004	M_r4 =	490.6714 (mg/s)
	mass flux in river at SW-004A	M_r4A =	1,151.1528 (mg/s)
	mass flux in river at SW-005	M_r5 =	2,007.4853 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	2,184.7876 (mg/s)
mass flux into Colby Lake	M_cl =	2,653.7498 (mg/s)	
Convert mass flux to concentration			Low Flow
	concentration in river at SW-001	C_r1 =	6.10119 (mg/L)
	concentration in river at SW-002	C_r2 =	7.59194 (mg/L)
	concentration in river at SW-003	C_r3 =	7.98844 (mg/L)
	concentration in river at SW-004	C_r4 =	8.67325 (mg/L)
	concentration in river at SW-004A	C_r4A =	11.83646 (mg/L)
	concentration in river at SW-005	C_r5 =	12.43057 (mg/L)
	concentration in river at USGS Gage	C_r6 =	12.49901 (mg/L)
concentration in Colby Lake (H)	C_cl =	3.90368 (mg/L)	

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 12 Nickel		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0016 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0016 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0016 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0016 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0016 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0016 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0016 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0016 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0033 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0016 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0163 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0163 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0163 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0163 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0163 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0163 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0163 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0163 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.4787 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.8600 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.8600 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.8600 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	179.7477 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0080 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.0190 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.4787 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.8600 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_g3LOs =	0.8600 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.8600 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	179.7477 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0080 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0163 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0163 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0163 (mg/L)
concentration of liner leakage from WWTF pond	C_gWTFp =	3.7146 (mg/L)	
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	(mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.08293 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.04387 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	(mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.14124 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	(mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.04874 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gwp_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00081 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00007 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	(mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.14336 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gwp_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	(mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00007 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00013 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.02365 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.01725 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00024 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00426 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00001 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00001 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00539 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	(mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.63818 (mg/s)
	mass flux of West Pit overflow	M_gms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.09043 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.02456 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	(mg/s)
	mass flux of ground water into SW-005	M_g5 =	1.04584 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	(mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.21654 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	(mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.53905 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.03642 (mg/s)
Mass balance at each node	mass flux in river at SW-001	M_r1 =	0.1268 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.2680 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.3177 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.5120 (mg/s)
	mass flux in river at SW-004A	M_r4A =	1.2652 (mg/s)
	mass flux in river at SW-005	M_r5 =	2.3111 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	2.5276 (mg/s)
	mass flux into Colby Lake	M_cl =	3.1031 (mg/s)
Convert mass flux to concentration	concentration in river at SW-001	C_r1 =	0.00380 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00637 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00705 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00905 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.01301 (mg/L)
	concentration in river at SW-005	C_r5 =	0.01431 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.01446 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.00340 (mg/L)

**Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1**

Case	Year 12
Parameter	Lead
Input concentration data	concentration of surface water into SW-001
	concentration of surface water into SW-002
	concentration of surface water into SW-003
	concentration of surface water into SW-004
	concentration of surface water into SW-004A
	concentration of surface water into SW-005
	concentration of surface water into USGS Gage
	concentration of surface water into Colby Lake
	concentration of surface water inflow from Hoyt Lakes WWTP
	concentration of surface water discharges from upstream of PM-1
	concentration of surface water flow from West Pit overflow
	concentration of ground water into SW-001
	concentration of ground water into SW-002
	concentration of ground water into SW-003
	concentration of ground water into SW-004
	concentration of ground water into SW-004A
	concentration of ground water into SW-005
	concentration of ground water into USGS Gage
	concentration of ground water into Colby Lake
	concentration of ground water seepage from East Pit
	concentration of ground water seepage from West Pit
	concentration of liner leakage from Cat 1 stockpile
	concentration of liner leakage from Cat 2/3 stockpile
	concentration of liner leakage from Cat 3LO stockpile
	concentration of liner leakage from Cat 4 stockpile
	concentration of liner leakage from LOSP
	concentration of seepage from Overburden (Storage)
	concentration of seepage from Overburden (Cat 1)
	concentration of liner leakage from Cat 1 sumps
	concentration of liner leakage from Cat 2/3 sumps
	concentration of liner leakage from Cat 3LO sumps
	concentration of liner leakage from Cat 4 sumps
	concentration of liner leakage from LOSP sumps
	concentration of seepage from Overburden Ponds - PW1
	concentration of seepage from Overburden Pond - PW7
	concentration of leakage from Haul Road Pond - PW2
	concentration of leakage from Haul Road Pond - PW4
	concentration of leakage from RTH Pond - PW3
	concentration of liner leakage from WWTF pond
Convert concentration to mass flux	mass flux of surface water into SW-001
	mass flux of ground water into SW-001
	mass flux of surface discharges from upstream of PM-1
	mass flux of surface water into SW-002
	mass flux of ground water into SW-002
	mass flux of surface water into SW-003
	mass flux of ground water into SW-003
	mass flux of seepage from East Pit to SW-003
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003
	mass flux of liner leakage from Cat 3LO stockpile to SW-003
	mass flux of liner leakage from Cat 2/3 sumps to SW-003
	mass flux of surface water into SW-004
	mass flux of ground water into SW-004
	mass flux of seepage from East Pit to SW-004
	mass flux of seepage from West Pit
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004
	mass flux of liner leakage from Cat 3LO stockpile to SW-004
	mass flux of liner leakage from Cat 4 stockpile
	mass flux of liner leakage from LOSP
	mass flux of seepage from Overburden (Storage)
	mass flux of liner leakage from Cat 3LO sumps to SW-004
	mass flux of liner leakage from Cat 4 sumps
	mass flux of liner leakage from LOSP sumps
	mass flux of seepage from Overburden Ponds - PW1
	mass flux of leakage from Haul Road Pond - PW2
	mass flux of leakage from Haul Road Pond - PW4
	mass flux of leakage from RTH Pond - PW3
	mass flux of liner leakage from WWTF pond
	mass flux of surface water into SW-004A
	mass flux of ground water into SW-004A
	mass flux of West Pit overflow
	mass flux of liner leakage from Cat 1 stockpile
	mass flux of liner leakage from Cat 1 sumps
	mass flux of seepage from Overburden (Cat 1)
	mass flux of seepage from Overburden Pond - PW7
	mass flux of surface water into SW-005
	mass flux of ground water into SW-005
	mass flux of surface water into USGS Gage
	mass flux of ground water into USGS Gage
	mass flux of surface water into Colby Lake
	mass flux of ground water into Colby Lake
	mass flux of surface water from Hoyt Lakes WWTP
Mass balance at each node	mass flux in river at SW-001
	mass flux in river at SW-002
	mass flux in river at SW-003
	mass flux in river at SW-004
	mass flux in river at SW-004A
	mass flux in river at SW-005
	mass flux in river at USGS Gage
	mass flux into Colby Lake
Convert mass flux to concentration	concentration in river at SW-001
	concentration in river at SW-002
	concentration in river at SW-003
	concentration in river at SW-004
	concentration in river at SW-004A
	concentration in river at SW-005
	concentration in river at USGS Gage
	concentration in Colby Lake (H)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case	Year 12		
Parameter	Antimony		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0015 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0015 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0015 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0015 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0015 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0015 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0015 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0015 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0015 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0015 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0015 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0015 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0015 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0015 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0015 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0015 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0015 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0015 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.0800 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.0800 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0800 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0800 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.0800 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0003 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.0004 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.0800 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.0800 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.0800 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0800 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0800 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0003 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0015 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0015 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0015 (mg/L)
	concentration of liner leakage from WWTF pond	C gWTFp =	0.0588 (mg/L)
			Low Flow
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	(mg/s)
	mass flux of ground water into SW-001	M g1 =	0.00764 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.04245 (mg/s)
	mass flux of surface water into SW-002	M s2 =	(mg/s)
	mass flux of ground water into SW-002	M g2 =	0.01301 (mg/s)
	mass flux of surface water into SW-003	M s3 =	(mg/s)
	mass flux of ground water into SW-003	M g3 =	0.00449 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.00008 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	(mg/s)
	mass flux of ground water into SW-004	M g4 =	0.01321 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	(mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00001 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.00065 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.00016 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00009 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	(mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.05880 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	0.01511 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	0.00052 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	(mg/s)
	mass flux of ground water into SW-005	M g5 =	0.09636 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	(mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.01995 (mg/s)
mass flux of surface water into Colby Lake	M scl =	(mg/s)	
mass flux of ground water into Colby Lake	M gcl =	0.04967 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.01656 (mg/s)	
			Low Flow
Mass balance at each node	mass flux in river at SW-001	M r1 =	0.0501 (mg/s)
	mass flux in river at SW-002	M r2 =	0.0631 (mg/s)
	mass flux in river at SW-003	M r3 =	0.0677 (mg/s)
	mass flux in river at SW-004	M r4 =	0.0818 (mg/s)
	mass flux in river at SW-004A	M r4A =	0.1562 (mg/s)
	mass flux in river at SW-005	M r5 =	0.2526 (mg/s)
	mass flux in river at USGS Gage	M r6 =	0.2726 (mg/s)
	mass flux into Colby Lake	M cl =	0.3388 (mg/s)
			Low Flow
Convert mass flux to concentration	concentration in river at SW-001	C r1 =	0.00150 (mg/L)
	concentration in river at SW-002	C r2 =	0.00150 (mg/L)
	concentration in river at SW-003	C r3 =	0.00150 (mg/L)
	concentration in river at SW-004	C r4 =	0.00145 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00161 (mg/L)
	concentration in river at SW-005	C r5 =	0.00156 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00156 (mg/L)
	concentration in Colby Lake (H)	C cl =	0.00151 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 12 Selenium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0005 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0005 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0005 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0005 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0005 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0005 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0005 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0005 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0005 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sms =	0.0005 (mg/L)
	concentration of surface water flow from West Pit overflow	C_g1 =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g2 =	0.0019 (mg/L)
	concentration of ground water into SW-002	C_g3 =	0.0019 (mg/L)
	concentration of ground water into SW-003	C_g4 =	0.0019 (mg/L)
	concentration of ground water into SW-004	C_g4A =	0.0019 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0019 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0019 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0019 (mg/L)
	concentration of ground water seepage from East Pit	C_gwp =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gC12 =	0.0029 (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC3 =	0.0029 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3LO =	0.0029 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC4 =	0.0029 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4LO =	0.0029 (mg/L)
	concentration of liner leakage from LOSP	C_gOS =	0.0004 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gO12 =	0.0019 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gC12s =	0.0029 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC3s =	0.0029 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_g3LOs =	0.0029 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC4s =	0.0029 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4LOs =	0.0029 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0004 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0019 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0019 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0019 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0026 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00973 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sms =	0.01415 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.01657 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00572 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gwp_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.01682 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gwp_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00096 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00024 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00000 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.07487 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.00055 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.00246 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.12270 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.02540 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.06324 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00552 (mg/s)
Mass balance at each node	mass flux in river at SW-001	M_r1 =	0.0239 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.0405 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.0462 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.0642 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.1421 (mg/s)
	mass flux in river at SW-005	M_r5 =	0.2648 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	0.2902 (mg/s)
	mass flux into Colby Lake	M_cl =	0.3589 (mg/s)
Convert mass flux to concentration	concentration in river at SW-001	C_r1 =	0.00072 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00096 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00102 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00113 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00146 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00164 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00166 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.00067 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 12 Sulfate		
Input concentration data	concentration of surface water into SW-001	C_s1 =	9.0000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	9.0000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	9.0000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	9.0000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	9.0000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	9.0000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	9.0000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	9.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	9.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	22.0000 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	16.1300 (mg/L)
	concentration of ground water into SW-002	C_g2 =	16.1300 (mg/L)
	concentration of ground water into SW-003	C_g3 =	16.1300 (mg/L)
	concentration of ground water into SW-004	C_g4 =	16.1300 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	16.1300 (mg/L)
	concentration of ground water into SW-005	C_g5 =	16.1300 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	16.1300 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	16.1300 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	1,854.0847 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	2,340.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	2,340.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	2,340.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	9,600.0000 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	35.1700 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	68.3000 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	1,854.0847 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	2,340.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	2,340.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	2,340.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	9,600.0000 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	35.1700 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	16.1300 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	16.1300 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	16.1300 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	1,882.9951 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	(mg/s)
	mass flux of ground water into SW-001	M_g1 =	82.16622 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	622.60000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	(mg/s)
	mass flux of ground water into SW-002	M_g2 =	139.94026 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	(mg/s)
	mass flux of ground water into SW-003	M_g3 =	48.29404 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	2.19593 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.19321 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00189 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	(mg/s)
	mass flux of ground water into SW-004	M_g4 =	142.03802 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	(mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.19321 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.35752 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	1.26303 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	76.11262 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00180 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00164 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.01279 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	16.81988 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00614 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.01315 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	2.73227 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	(mg/s)
	mass flux of ground water into SW-004A	M_g4A =	632.29902 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	350.21451 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.04063 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	88.29738 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	(mg/s)
	mass flux of ground water into SW-005	M_g5 =	1,036.20733 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	(mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	214.54513 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	(mg/s)
	mass flux of surface water into Colby Lake	M_scl =	(mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	534.08043 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	99.33300 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	704.7662 (mg/s)
	mass flux in river at SW-002	M_r2 =	844.7065 (mg/s)
	mass flux in river at SW-003	M_r3 =	895.3916 (mg/s)
	mass flux in river at SW-004	M_r4 =	1,136.9455 (mg/s)
	mass flux in river at SW-004A	M_r4A =	2,207.7970 (mg/s)
	mass flux in river at SW-005	M_r5 =	3,244.0044 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	3,458.5495 (mg/s)
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C_r1 =	21.10458 (mg/L)
	concentration in river at SW-002	C_r2 =	20.07870 (mg/L)
	concentration in river at SW-003	C_r3 =	19.86896 (mg/L)
	concentration in river at SW-004	C_r4 =	20.09698 (mg/L)
	concentration in river at SW-004A	C_r4A =	22.70116 (mg/L)
	concentration in river at SW-005	C_r5 =	20.08723 (mg/L)
	concentration in river at USGS Gage	C_r6 =	19.78611 (mg/L)
	concentration in Colby Lake (H)	C_cl =	10.42139 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case	Year 12		
Parameter	Thallium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0004 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0004 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0004 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0004 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0004 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0004 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0004 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0004 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0004 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0003 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0000 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0000 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0000 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0000 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0000 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0000 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0000 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0000 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0001 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0000 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0001 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0000 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0000 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0000 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0000 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0011 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00002 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.00809 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.00003 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00001 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.00004 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00009 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00002 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00000 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.00016 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.00026 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.00005 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.00013 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00441 (mg/s)
Mass balance at each node	mass flux in river at SW-001	M_r1 =	0.0081 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.0081 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.0082 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.0083 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.0085 (mg/s)
	mass flux in river at SW-005	M_r5 =	0.0087 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	0.0088 (mg/s)
	mass flux into Colby Lake	M_cl =	0.0133 (mg/s)
Convert mass flux to concentration	concentration in river at SW-001	C_r1 =	0.00024 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00019 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00018 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00015 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00009 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00005 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00005 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.00035 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case	Year 12		
Parameter	Vanadium		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0009 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0009 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0009 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0009 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0009 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0009 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0009 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0009 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0009 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0043 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0043 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0043 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0043 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0043 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0043 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0043 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0043 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0043 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.2858 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	2.0133 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	2.3375 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.7395 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.0535 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0017 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.0014 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.2858 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	2.0133 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	2.3375 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.7395 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0535 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0017 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0043 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0043 (mg/L)
concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0043 (mg/L)	
concentration of liner leakage from WWTF pond	C gWTFp =	1.0181 (mg/L)	
			Low Flow
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	(mg/s)
	mass flux of ground water into SW-001	M g1 =	0.02190 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.12169 (mg/s)
	mass flux of surface water into SW-002	M s2 =	(mg/s)
	mass flux of ground water into SW-002	M g2 =	0.03731 (mg/s)
	mass flux of surface water into SW-003	M s3 =	(mg/s)
	mass flux of ground water into SW-003	M g3 =	0.01287 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.00189 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00019 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	(mg/s)
	mass flux of ground water into SW-004	M g4 =	0.03787 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	(mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00019 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00011 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.00374 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.00093 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00148 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	(mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.16856 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	0.05399 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	0.00181 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	(mg/s)
	mass flux of ground water into SW-005	M g5 =	0.27624 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	(mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.05719 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	(mg/s)
	mass flux of ground water into Colby Lake	M gcl =	0.14238 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.00993 (mg/s)
			Low Flow
Mass balance at each node	mass flux in river at SW-001	M r1 =	0.1436 (mg/s)
	mass flux in river at SW-002	M r2 =	0.1809 (mg/s)
	mass flux in river at SW-003	M r3 =	0.1959 (mg/s)
	mass flux in river at SW-004	M r4 =	0.2402 (mg/s)
	mass flux in river at SW-004A	M r4A =	0.4646 (mg/s)
	mass flux in river at SW-005	M r5 =	0.7408 (mg/s)
	mass flux in river at USGS Gage	M r6 =	0.7980 (mg/s)
mass flux into Colby Lake	M cl =	0.9503 (mg/s)	
			Low Flow
Convert mass flux to concentration	concentration in river at SW-001	C r1 =	0.00430 (mg/L)
	concentration in river at SW-002	C r2 =	0.00430 (mg/L)
	concentration in river at SW-003	C r3 =	0.00435 (mg/L)
	concentration in river at SW-004	C r4 =	0.00425 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00478 (mg/L)
	concentration in river at SW-005	C r5 =	0.00459 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00457 (mg/L)
concentration in Colby Lake (H)	C cl =	0.00140 (mg/L)	

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case	Year 12			
Parameter	Zinc			
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0160 (mg/L)	
	concentration of surface water into SW-002	C s2 =	0.0160 (mg/L)	
	concentration of surface water into SW-003	C s3 =	0.0160 (mg/L)	
	concentration of surface water into SW-004	C s4 =	0.0160 (mg/L)	
	concentration of surface water into SW-004A	C s4A =	0.0160 (mg/L)	
	concentration of surface water into SW-005	C s5 =	0.0160 (mg/L)	
	concentration of surface water into USGS Gage	C s6 =	0.0160 (mg/L)	
	concentration of surface water into Colby Lake	C scl =	0.0160 (mg/L)	
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0620 (mg/L)	
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0073 (mg/L)	
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)	
	concentration of ground water into SW-001	C g1 =	0.0275 (mg/L)	
	concentration of ground water into SW-002	C g2 =	0.0275 (mg/L)	
	concentration of ground water into SW-003	C g3 =	0.0275 (mg/L)	
	concentration of ground water into SW-004	C g4 =	0.0275 (mg/L)	
	concentration of ground water into SW-004A	C g4A =	0.0275 (mg/L)	
	concentration of ground water into SW-005	C g5 =	0.0275 (mg/L)	
	concentration of ground water into USGS Gage	C g6 =	0.0275 (mg/L)	
	concentration of ground water into Colby Lake	C gcl =	0.0275 (mg/L)	
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)	
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)	
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.0900 (mg/L)	
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.0900 (mg/L)	
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0900 (mg/L)	
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0900 (mg/L)	
	concentration of liner leakage from LOSP	C gC4LO =	26.0000 (mg/L)	
	concentration of seepage from Overburden (Storage)	C gOS =	0.0046 (mg/L)	
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.0030 (mg/L)	
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.0900 (mg/L)	
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.0900 (mg/L)	
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.0900 (mg/L)	
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0900 (mg/L)	
	concentration of liner leakage from LOSP sumps	C gC4LOs =	26.0000 (mg/L)	
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0046 (mg/L)	
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)	
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0275 (mg/L)	
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0275 (mg/L)	
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0275 (mg/L)	
	concentration of liner leakage from WWTF pond	C gWTFp =	1.2883 (mg/L)	
				Low Flow
	Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	(mg/s)
		mass flux of ground water into SW-001	M g1 =	0.14009 (mg/s)
mass flux of surface discharges from upstream of PM-1		M sns =	0.20744 (mg/s)	
mass flux of surface water into SW-002		M s2 =	(mg/s)	
mass flux of ground water into SW-002		M g2 =	0.23858 (mg/s)	
mass flux of surface water into SW-003		M s3 =	(mg/s)	
mass flux of ground water into SW-003		M g3 =	0.08234 (mg/s)	
mass flux of seepage from East Pit to SW-003		M gep_003 =	#N/A (mg/s)	
mass flux of liner leakage from Cat 2/3 stockpile to SW-003		M gC3_003 =	0.00008 (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-003		M gC3LO_003 =	0.00001 (mg/s)	
mass flux of liner leakage from Cat 2/3 sumps to SW-003		M gC3s_003 =	0.00000 (mg/s)	
mass flux of surface water into SW-004		M s4 =	(mg/s)	
mass flux of ground water into SW-004		M g4 =	0.24216 (mg/s)	
mass flux of seepage from East Pit to SW-004		M gep_004 =	#N/A (mg/s)	
mass flux of seepage from West Pit		M gwp =	#N/A (mg/s)	
mass flux of liner leakage from Cat 2/3 stockpile to SW-004		M gC3_004 =	(mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-004		M gC3LO_004 =	0.00001 (mg/s)	
mass flux of liner leakage from Cat 4 stockpile		M gC4 =	0.00001 (mg/s)	
mass flux of liner leakage from LOSP		M gC4LO =	0.00342 (mg/s)	
mass flux of seepage from Overburden (Storage)		M gOS =	0.00987 (mg/s)	
mass flux of liner leakage from Cat 3LO sumps to SW-004		M gC3LOs_004 =	0.00000 (mg/s)	
mass flux of liner leakage from Cat 4 sumps		M gC4s =	0.00000 (mg/s)	
mass flux of liner leakage from LOSP sumps		M gC4LOs =	0.00003 (mg/s)	
mass flux of seepage from Overburden Ponds - PW1		M gOp1 =	0.00244 (mg/s)	
mass flux of leakage from Haul Road Pond - PW2		M gHRp2 =	0.00001 (mg/s)	
mass flux of leakage from Haul Road Pond - PW4		M gHRp4 =	0.00002 (mg/s)	
mass flux of leakage from RTH Pond - PW3		M gRTHp =	0.00000 (mg/s)	
mass flux of liner leakage from WWTF pond		M gWTFp =	0.00187 (mg/s)	
mass flux of surface water into SW-004A		M s4A =	(mg/s)	
mass flux of ground water into SW-004A		M g4A =	1.07801 (mg/s)	
mass flux of West Pit overflow		M sms =	#N/A (mg/s)	
mass flux of liner leakage from Cat 1 stockpile		M gC12 =	0.01700 (mg/s)	
mass flux of liner leakage from Cat 1 sumps		M gC12s =	0.00000 (mg/s)	
mass flux of seepage from Overburden (Cat 1)		M gO12 =	0.00388 (mg/s)	
mass flux of seepage from Overburden Pond - PW7		M gOp7 =	#N/A (mg/s)	
mass flux of surface water into SW-005		M s5 =	(mg/s)	
mass flux of ground water into SW-005		M g5 =	1.76663 (mg/s)	
mass flux of surface water into USGS Gage		M s6 =	(mg/s)	
mass flux of ground water into USGS Gage		M g6 =	0.36578 (mg/s)	
mass flux of surface water into Colby Lake		M scl =	(mg/s)	
mass flux of ground water into Colby Lake		M gcl =	0.91055 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP		M shl =	0.68429 (mg/s)	
			Low Flow	
Mass balance at each node	mass flux in river at SW-001	M r1 =	0.3475 (mg/s)	
	mass flux in river at SW-002	M r2 =	0.5861 (mg/s)	
	mass flux in river at SW-003	M r3 =	0.6685 (mg/s)	
	mass flux in river at SW-004	M r4 =	0.9284 (mg/s)	
	mass flux in river at SW-004A	M r4A =	2.0273 (mg/s)	
	mass flux in river at SW-005	M r5 =	3.7939 (mg/s)	
	mass flux in river at USGS Gage	M r6 =	4.1597 (mg/s)	
	mass flux into Colby Lake	M cl =	5.7545 (mg/s)	
			Low Flow	
Convert mass flux to concentration	concentration in river at SW-001	C r1 =	0.01041 (mg/L)	
	concentration in river at SW-002	C r2 =	0.01393 (mg/L)	
	concentration in river at SW-003	C r3 =	0.01483 (mg/L)	
	concentration in river at SW-004	C r4 =	0.01641 (mg/L)	
	concentration in river at SW-004A	C r4A =	0.02084 (mg/L)	
	concentration in river at SW-005	C r5 =	0.02349 (mg/L)	
	concentration in river at USGS Gage	C r6 =	0.02380 (mg/L)	
	concentration in Colby Lake (H)	C cl =	0.01750 (mg/L)	

## Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1 - Mine Site - Reason

### FLOWS

Case Flow	Year 12 Average Flow Conditions (mean annual)		
Total flow in Partridge River	flow in river at SW-001	Q_r1_M =	5.70 (cfs)
	flow in river at SW-002	Q_r2_M =	11.27 (cfs)
	flow in river at SW-003	Q_r3_M =	12.92 (cfs)
	flow in river at SW-004	Q_r4_M =	19.08 (cfs)
	flow in river at SW-004A	Q_r4a_M =	43.74 (cfs)
	flow in river at SW-005	Q_r5_M =	82.13 (cfs)
	flow in river at USGS Gage	Q_r6_M =	86.48 (cfs)
	total flow into Colby Lake	Q_cl_M =	111.60 (cfs)
	flow check	Q_ck_M =	111.60 (cfs)
input flow data	surface water flow into SW-001	Q_s1_M =	4.52 (cfs)
	surface water flow into SW-002	Q_s2_M =	5.27 (cfs)
	surface water flow into SW-003	Q_s3_M =	1.54 (cfs)
	surface water flow into SW-004	Q_s4_M =	5.75 (cfs)
	surface water flow into SW-004A	Q_s4a_M =	23.21 (cfs)
	surface water flow into SW-005	Q_s5_M =	36.12 (cfs)
	surface water flow into USGS Gage	Q_s6_M =	3.88 (cfs)
	surface water flow into Colby Lake	Q_scl_M =	23.56 (cfs)
	surface water inflow from Hoyt Lakes WWTP	Q_shl_M =	0.39 (cfs)
	surface water inflow from discharges upstream of PM-1	Q_sns_M =	1.00 (cfs)
	surface water flow from West Pit overflow	Q_sms_M =	- (cfs)
	ground water flow into SW-001	Q_g1_M =	0.18 (cfs)
	ground water flow into SW-002	Q_g2_M =	0.31 (cfs)
	ground water flow into SW-003	Q_g3_M =	0.11 (cfs)
	ground water flow into SW-004	Q_g4_M =	0.31 (cfs)
	ground water flow into SW-004A	Q_g4a_M =	1.39 (cfs)
	ground water flow into SW-005	Q_g5_M =	2.27 (cfs)
	ground water flow into USGS Gage	Q_g6_M =	0.47 (cfs)
	ground water flow into Colby Lake	Q_gcl_M =	1.17 (cfs)
	ground water seepage from East Pit to SW-003	Q_gep_003_M =	- (cfs)
	ground water seepage from East Pit to SW-004	Q_gep_004_M =	- (cfs)
	ground water seepage from West Pit	Q_gwp_M =	- (cfs)
	ground water liner leakage from Cat 1 stockpile	Q_gC12_M =	0.0086 (cfs)
	ground water liner leakage from Cat 2/3 stockpile to SW-003	Q_gC3_003_M =	0.0001 (cfs)
	ground water liner leakage from Cat 2/3 stockpile to SW-004	Q_gC3_004_M =	- (cfs)
	ground water liner leakage from Cat 3LO stockpile to SW-003	Q_gC3LO_003_M =	0.0000 (cfs)
	ground water liner leakage from Cat 3LO stockpile to SW-004	Q_gC3LO_004_M =	0.0000 (cfs)
	ground water liner leakage from Cat 4 stockpile	Q_gC4_M =	0.0000 (cfs)
	ground water liner leakage from LOSP	Q_gC4LO_M =	0.0000 (cfs)
	ground water seepage from Overburden Storage	Q_gOS_M =	0.0765 (cfs)
	ground water seepage from Overburden (Cat 1)	Q_gO12_M =	0.0628 (cfs)
	ground water liner leakage from Cat 1 sumps	Q_gC12s_M =	0.0000 (cfs)
	ground water liner leakage from Cat 2/3 sumps	Q_gC3s_M =	0.0000 (cfs)
	ground water liner leakage from Cat 3LO sumps	Q_gC3LOs_M =	0.0000 (cfs)
	ground water liner leakage from Cat 4 sumps	Q_gC4s_M =	0.0000 (cfs)
	ground water liner leakage from LOSP sumps	Q_gC4LOs_M =	0.0000 (cfs)
	ground water seepage from Overburden pond - PW1	Q_gOp1_M =	0.0189 (cfs)
	ground water seepage from Overburden pond - PW7	Q_gOp7_M =	- (cfs)
	ground water leakage from Haul Road pond - PW2	Q_gHRp2_M =	0.0000 (cfs)
	ground water leakage from Haul Road pond - PW4	Q_gHRp4_M =	0.0000 (cfs)
	ground water leakage from RTH pond - PW3	Q_gRTHp_M =	0.0000 (cfs)
	ground water liner leakage from WWTF pond	Q_gWTFp_M =	0.000051 (cfs)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1 - Mine Site - Reasonable Alternative 1

Case Parameter	Year 12 Silver			
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0001 (mg/L)	
	concentration of surface water into SW-002	C s2 =	0.0001 (mg/L)	
	concentration of surface water into SW-003	C s3 =	0.0001 (mg/L)	
	concentration of surface water into SW-004	C s4 =	0.0001 (mg/L)	
	concentration of surface water into SW-004A	C s4A =	0.0001 (mg/L)	
	concentration of surface water into SW-005	C s5 =	0.0001 (mg/L)	
	concentration of surface water into USGS Gage	C s6 =	0.0001 (mg/L)	
	concentration of surface water into Colby Lake	C scl =	0.0001 (mg/L)	
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0001 (mg/L)	
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0001 (mg/L)	
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)	
	concentration of ground water into SW-001	C g1 =	0.0006 (mg/L)	
	concentration of ground water into SW-002	C g2 =	0.0006 (mg/L)	
	concentration of ground water into SW-003	C g3 =	0.0006 (mg/L)	
	concentration of ground water into SW-004	C g4 =	0.0006 (mg/L)	
	concentration of ground water into SW-004A	C g4A =	0.0006 (mg/L)	
	concentration of ground water into SW-005	C g5 =	0.0006 (mg/L)	
	concentration of ground water into USGS Gage	C g6 =	0.0006 (mg/L)	
	concentration of ground water into Colby Lake	C gcl =	0.0006 (mg/L)	
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)	
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)	
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.0007 (mg/L)	
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.0007 (mg/L)	
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0007 (mg/L)	
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0007 (mg/L)	
	concentration of liner leakage from LOSP	C gC4LO =	0.0007 (mg/L)	
	concentration of seepage from Overburden (Storage)	C gOS =	- (mg/L)	
	concentration of seepage from Overburden (Cat 1)	C gO12 =	- (mg/L)	
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.0007 (mg/L)	
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.0007 (mg/L)	
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.0007 (mg/L)	
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0007 (mg/L)	
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0007 (mg/L)	
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	- (mg/L)	
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)	
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0006 (mg/L)	
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0006 (mg/L)	
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0006 (mg/L)	
	concentration of liner leakage from WWTF ponc	C_gWTFp =	0.0008 (mg/L)	
			Average Flow	
	Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	0.01279 (mg/s)
		mass flux of ground water into SW-001	M g1 =	0.00280 (mg/s)
mass flux of surface discharges from upstream of PM-1		M sns =	0.00340 (mg/s)	
mass flux of surface water into SW-002		M s2 =	0.01490 (mg/s)	
mass flux of ground water into SW-002		M g2 =	0.00477 (mg/s)	
mass flux of surface water into SW-003		M s3 =	0.00436 (mg/s)	
mass flux of ground water into SW-003		M g3 =	0.00165 (mg/s)	
mass flux of seepage from East Pit to SW-003		M gep_003 =	#N/A (mg/s)	
mass flux of liner leakage from Cat 2/3 stockpile to SW-003		M gC3_003 =	0.00000 (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-003		M gC3LO_003 =	0.00000 (mg/s)	
mass flux of liner leakage from Cat 2/3 sumps to SW-003		M gC3s_003 =	0.00000 (mg/s)	
mass flux of surface water into SW-004		M s4 =	0.01627 (mg/s)	
mass flux of ground water into SW-004		M g4 =	0.00484 (mg/s)	
mass flux of seepage from East Pit to SW-004		M gep_004 =	#N/A (mg/s)	
mass flux of seepage from West Pit		M gwp =	#N/A (mg/s)	
mass flux of liner leakage from Cat 2/3 stockpile to SW-004		M gC3_004 =	- (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-004		M gC3LO_004 =	0.00000 (mg/s)	
mass flux of liner leakage from Cat 4 stockpile		M gC4 =	0.00000 (mg/s)	
mass flux of liner leakage from LOSP		M gC4LO =	0.00000 (mg/s)	
mass flux of seepage from Overburden (Storage)		M gOS =	- (mg/s)	
mass flux of liner leakage from Cat 3LO sumps to SW-004		M gC3LOs_004 =	0.00000 (mg/s)	
mass flux of liner leakage from Cat 4 sumps		M gC4s =	0.00000 (mg/s)	
mass flux of liner leakage from LOSP sumps		M gC4LOs =	0.00000 (mg/s)	
mass flux of seepage from Overburden Ponds - PW1		M gOp1 =	- (mg/s)	
mass flux of leakage from Haul Road Pond - PW2		M gHRp2 =	0.00000 (mg/s)	
mass flux of leakage from Haul Road Pond - PW4		M gHRp4 =	0.00000 (mg/s)	
mass flux of leakage from RTH Pond - PW3		M gRTHp =	0.00000 (mg/s)	
mass flux of liner leakage from WWTF pond		M gWTFp =	0.00000 (mg/s)	
mass flux of surface water into SW-004A		M s4A =	0.06568 (mg/s)	
mass flux of ground water into SW-004A		M g4A =	0.02156 (mg/s)	
mass flux of West Pit overflow		M sms =	#N/A (mg/s)	
mass flux of liner leakage from Cat 1 stockpile		M gC12 =	0.00017 (mg/s)	
mass flux of liner leakage from Cat 1 sumps		M gC12s =	0.00000 (mg/s)	
mass flux of seepage from Overburden (Cat 1)		M gO12 =	- (mg/s)	
mass flux of seepage from Overburden Pond - PW7		M gOp7 =	#N/A (mg/s)	
mass flux of surface water into SW-005		M s5 =	0.10221 (mg/s)	
mass flux of ground water into SW-005		M g5 =	0.03533 (mg/s)	
mass flux of surface water into USGS Gage		M s6 =	0.01098 (mg/s)	
mass flux of ground water into USGS Gage		M g6 =	0.00732 (mg/s)	
mass flux of surface water into Colby Lake		M scl =	0.06667 (mg/s)	
mass flux of ground water into Colby Lake		M gcl =	0.01821 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP		M shl =	0.00110 (mg/s)	
Mass balance at each node	Average Flow			
	mass flux in river at SW-001	M r1 =	0.0190 (mg/s)	
	mass flux in river at SW-002	M r2 =	0.0387 (mg/s)	
	mass flux in river at SW-003	M r3 =	0.0447 (mg/s)	
	mass flux in river at SW-004	M r4 =	0.0658 (mg/s)	
	mass flux in river at SW-004A	M r4A =	0.1532 (mg/s)	
	mass flux in river at SW-005	M r5 =	0.2907 (mg/s)	
Convert mass flux to concentration	mass flux in river at USGS Gage	M r6 =	0.3090 (mg/s)	
	mass flux into Colby Lake	M cl =	0.3950 (mg/s)	
		Average Flow		
Convert mass flux to concentration	concentration in river at SW-001	C r1 =	0.00012 (mg/L)	
	concentration in river at SW-002	C r2 =	0.00012 (mg/L)	
	concentration in river at SW-003	C r3 =	0.00012 (mg/L)	
	concentration in river at SW-004	C r4 =	0.00012 (mg/L)	
	concentration in river at SW-004A	C r4A =	0.00012 (mg/L)	
	concentration in river at SW-005	C r5 =	0.00013 (mg/L)	
	concentration in river at USGS Gage	C r6 =	0.00013 (mg/L)	
	concentration in Colby Lake	C cl =	0.00013 (mg/L)	

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1 - Mine Site - Reasonable Alternative 1

Case Parameter	Year 12 Aluminum		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0700 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0700 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0700 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0700 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0700 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0700 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0700 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0700 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0700 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0173 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.1250 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.1250 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.1250 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.1250 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.1250 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.1250 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.1250 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.1250 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	1.6800 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	1.6800 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	1.6800 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	1.6800 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	83.0000 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.4106 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.1400 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	1.6800 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	1.6800 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	1.6800 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	1.6800 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	83.0000 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.4106 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.1250 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.1250 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.1250 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	4.9728 (mg/L)
		Average Flow	
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	8.95493 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.63675 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.48959 (mg/s)
	mass flux of surface water into SW-002	M s2 =	10.43313 (mg/s)
	mass flux of ground water into SW-002	M g2 =	1.08447 (mg/s)
	mass flux of surface water into SW-003	M s3 =	3.05142 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.37426 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.00259 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00023 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	11.38815 (mg/s)
	mass flux of ground water into SW-004	M g4 =	1.10073 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00023 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00042 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.01786 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.88859 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00011 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.21972 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00005 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00010 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00722 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	45.97449 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	4.90002 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	0.40974 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00004 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	0.24865 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	71.54936 (mg/s)
	mass flux of ground water into SW-005	M g5 =	8.03013 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	7.68606 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	1.66263 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	46.67236 (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	4.13888 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.77259 (mg/s)
Mass balance at each node	Average Flow		
	mass flux in river at SW-001	M r1 =	10.0813 (mg/s)
	mass flux in river at SW-002	M r2 =	21.5989 (mg/s)
	mass flux in river at SW-003	M r3 =	25.0274 (mg/s)
	mass flux in river at SW-004	M r4 =	38.6505 (mg/s)
	mass flux in river at SW-004A	M r4A =	90.1835 (mg/s)
	mass flux in river at SW-005	M r5 =	169.7630 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M r6 =	179.1116 (mg/s)
	mass flux into Colby Lake	M cl =	230.6955 (mg/s)
	Average Flow		
	concentration in river at SW-001	C r1 =	0.06249 (mg/L)
	concentration in river at SW-002	C r2 =	0.06770 (mg/L)
	concentration in river at SW-003	C r3 =	0.06845 (mg/L)
	concentration in river at SW-004	C r4 =	0.07160 (mg/L)
	concentration in river at SW-004A	C r4A =	0.07286 (mg/L)
	concentration in river at SW-005	C r5 =	0.07304 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.07319 (mg/L)
	concentration in Colby Lake	C cl =	0.07305 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1 - Mine Site - Reasonable Alternative 1

Case Parameter	Year 12 Arsenic		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0021 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0021 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0021 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0021 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0021 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0021 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0021 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0021 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0021 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0065 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0022 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0022 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0022 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0022 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0022 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0022 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0022 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0022 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.2237 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.7100 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.7100 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.7100 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.1452 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0016 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.0027 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.2237 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.7100 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.7100 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.7100 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.1452 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0016 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0022 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0022 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0022 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	0.4488 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	0.26993 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.01100 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.18395 (mg/s)
	mass flux of surface water into SW-002	M s2 =	0.31448 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.01874 (mg/s)
	mass flux of surface water into SW-003	M s3 =	0.09198 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.00647 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.00110 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00010 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	0.34327 (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.01902 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00010 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00018 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00003 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.00338 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.00083 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00065 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	1.38580 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.08467 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	0.05455 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	0.00480 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	2.15670 (mg/s)
	mass flux of ground water into SW-005	M g5 =	0.13876 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	0.23168 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.02873 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	1.40684 (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	0.07152 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.02329 (mg/s)
Mass balance at each node	mass flux in river at SW-001	M_r1 =	0.4649 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.7981 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.8977 (mg/s)
	mass flux in river at SW-004	M_r4 =	1.2652 (mg/s)
	mass flux in river at SW-004A	M_r4A =	2.7950 (mg/s)
	mass flux in river at SW-005	M_r5 =	5.0905 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	5.3509 (mg/s)
mass flux into Colby Lake	M_cl =	6.8525 (mg/s)	
Convert mass flux to concentration	concentration in river at SW-001	C_r1 =	0.00288 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00250 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00246 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00234 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00226 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00219 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00219 (mg/L)
	concentration in Colby Lake	C_cl =	0.00217 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1 - Mine Site - Reasonable Alternative 1

Case Parameter	Year 12 Boron		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0450 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0450 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0450 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0450 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0450 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0450 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0450 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0450 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0450 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0960 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0870 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0870 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0870 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0870 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0870 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0870 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0870 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0870 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.7600 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.7600 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.7600 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.7600 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.7600 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0622 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.0370 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.7600 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.7600 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.7600 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.7600 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.7600 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0622 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0870 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0870 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0870 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	0.5654 (mg/L)
		Average Flow	
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	5.75674 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.44318 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	2.71680 (mg/s)
	mass flux of surface water into SW-002	M s2 =	6.70701 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.75479 (mg/s)
	mass flux of surface water into SW-003	M s3 =	1.96162 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.26048 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.00117 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00010 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	7.32095 (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.76611 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00010 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00019 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00016 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.13461 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.03328 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00003 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00007 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00082 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	29.55503 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	3.41042 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	0.18536 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00002 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	0.06572 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	45.99602 (mg/s)
	mass flux of ground water into SW-005	M g5 =	5.58897 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	4.94104 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	1.15719 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	30.00366 (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	2.88066 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.49667 (mg/s)
Mass balance at each node	Average Flow		
	mass flux in river at SW-001	M r1 =	8.9167 (mg/s)
	mass flux in river at SW-002	M r2 =	16.3785 (mg/s)
	mass flux in river at SW-003	M r3 =	18.6019 (mg/s)
	mass flux in river at SW-004	M r4 =	26.8582 (mg/s)
	mass flux in river at SW-004A	M r4A =	60.0748 (mg/s)
	mass flux in river at SW-005	M r5 =	111.6598 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M r6 =	117.7580 (mg/s)
	mass flux into Colby Lake	M cl =	151.1390 (mg/s)
	Average Flow		
	concentration in river at SW-001	C r1 =	0.05527 (mg/L)
	concentration in river at SW-002	C r2 =	0.05134 (mg/L)
	concentration in river at SW-003	C r3 =	0.05088 (mg/L)
	concentration in river at SW-004	C r4 =	0.04975 (mg/L)
	concentration in river at SW-004A	C r4A =	0.04853 (mg/L)
	concentration in river at SW-005	C r5 =	0.04804 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.04812 (mg/L)
	concentration in Colby Lake	C cl =	0.04786 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1 - Mine Site - Reasonable Alternative 1

Case Parameter	Year 12 Barium			
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0077 (mg/L)	
	concentration of surface water into SW-002	C s2 =	0.0077 (mg/L)	
	concentration of surface water into SW-003	C s3 =	0.0077 (mg/L)	
	concentration of surface water into SW-004	C s4 =	0.0077 (mg/L)	
	concentration of surface water into SW-004A	C s4A =	0.0077 (mg/L)	
	concentration of surface water into SW-005	C s5 =	0.0077 (mg/L)	
	concentration of surface water into USGS Gage	C s6 =	0.0077 (mg/L)	
	concentration of surface water into Colby Lake	C scl =	0.0077 (mg/L)	
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0077 (mg/L)	
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0050 (mg/L)	
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)	
	concentration of ground water into SW-001	C g1 =	0.0219 (mg/L)	
	concentration of ground water into SW-002	C g2 =	0.0219 (mg/L)	
	concentration of ground water into SW-003	C g3 =	0.0219 (mg/L)	
	concentration of ground water into SW-004	C g4 =	0.0219 (mg/L)	
	concentration of ground water into SW-004A	C g4A =	0.0219 (mg/L)	
	concentration of ground water into SW-005	C g5 =	0.0219 (mg/L)	
	concentration of ground water into USGS Gage	C g6 =	0.0219 (mg/L)	
	concentration of ground water into Colby Lake	C gcl =	0.0219 (mg/L)	
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)	
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)	
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.1900 (mg/L)	
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.1900 (mg/L)	
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.1900 (mg/L)	
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.1900 (mg/L)	
	concentration of liner leakage from LOSP	C gC4LO =	0.1900 (mg/L)	
	concentration of seepage from Overburden (Storage)	C gOS =	0.0168 (mg/L)	
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.0140 (mg/L)	
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.1900 (mg/L)	
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.1900 (mg/L)	
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.1900 (mg/L)	
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.1900 (mg/L)	
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.1900 (mg/L)	
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0168 (mg/L)	
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)	
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0219 (mg/L)	
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0219 (mg/L)	
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0219 (mg/L)	
	concentration of liner leakage from WWTF ponc	C gWTFp =	0.1446 (mg/L)	
	Convert concentration to mass flux			Average Flow
		mass flux of surface water into SW-001	M s1 =	0.98248 (mg/s)
		mass flux of ground water into SW-001	M g1 =	0.11166 (mg/s)
		mass flux of surface discharges from upstream of PM-1	M sns =	0.14150 (mg/s)
mass flux of surface water into SW-002		M s2 =	1.14466 (mg/s)	
mass flux of ground water into SW-002		M g2 =	0.19017 (mg/s)	
mass flux of surface water into SW-003		M s3 =	0.33478 (mg/s)	
mass flux of ground water into SW-003		M g3 =	0.06563 (mg/s)	
mass flux of seepage from East Pit to SW-003		M gep_003 =	#N/A (mg/s)	
mass flux of liner leakage from Cat 2/3 stockpile to SW-003		M gC3_003 =	0.00029 (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-003		M gC3LO_003 =	0.00003 (mg/s)	
mass flux of liner leakage from Cat 2/3 sumps to SW-003		M gC3s_003 =	0.00000 (mg/s)	
mass flux of surface water into SW-004		M s4 =	1.24944 (mg/s)	
mass flux of ground water into SW-004		M g4 =	0.19302 (mg/s)	
mass flux of seepage from East Pit to SW-004		M gep_004 =	#N/A (mg/s)	
mass flux of seepage from West Pit		M gwp =	#N/A (mg/s)	
mass flux of liner leakage from Cat 2/3 stockpile to SW-004		M gC3_004 =	- (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-004		M gC3LO_004 =	0.00003 (mg/s)	
mass flux of liner leakage from Cat 4 stockpile		M gC4 =	0.00005 (mg/s)	
mass flux of liner leakage from LOSP		M gC4LO =	0.00004 (mg/s)	
mass flux of seepage from Overburden (Storage)		M gOS =	0.03643 (mg/s)	
mass flux of liner leakage from Cat 3LO sumps to SW-004		M gC3LOs_004 =	0.00000 (mg/s)	
mass flux of liner leakage from Cat 4 sumps		M gC4s =	0.00000 (mg/s)	
mass flux of liner leakage from LOSP sumps		M gC4LOs =	0.00000 (mg/s)	
mass flux of seepage from Overburden Ponds - PW1		M gOp1 =	0.00901 (mg/s)	
mass flux of leakage from Haul Road Pond - PW2		M gHRp2 =	0.00001 (mg/s)	
mass flux of leakage from Haul Road Pond - PW4		M gHRp4 =	0.00002 (mg/s)	
mass flux of leakage from RTH Pond - PW3		M gRTHp =	0.00000 (mg/s)	
mass flux of liner leakage from WWTF pond		M gWTFp =	0.00021 (mg/s)	
mass flux of surface water into SW-004A		M s4A =	5.04406 (mg/s)	
mass flux of ground water into SW-004A		M g4A =	0.85927 (mg/s)	
mass flux of West Pit overflow		M sms =	#N/A (mg/s)	
mass flux of liner leakage from Cat 1 stockpile		M gC12 =	0.04634 (mg/s)	
mass flux of liner leakage from Cat 1 sumps		M gC12s =	0.00000 (mg/s)	
mass flux of seepage from Overburden (Cat 1)		M gO12 =	0.02487 (mg/s)	
mass flux of seepage from Overburden Pond - PW7		M gOp7 =	#N/A (mg/s)	
mass flux of surface water into SW-005		M s5 =	7.84999 (mg/s)	
mass flux of ground water into SW-005		M g5 =	1.40816 (mg/s)	
mass flux of surface water into USGS Gage		M s6 =	0.84327 (mg/s)	
mass flux of ground water into USGS Gage		M g6 =	0.29156 (mg/s)	
mass flux of surface water into Colby Lake		M scl =	5.12062 (mg/s)	
mass flux of ground water into Colby Lake		M gcl =	0.72579 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP		M shl =	0.08476 (mg/s)	
Mass balance at each node			Average Flow	
	mass flux in river at SW-001	M r1 =	1.2356 (mg/s)	
	mass flux in river at SW-002	M r2 =	2.5705 (mg/s)	
	mass flux in river at SW-003	M r3 =	2.9712 (mg/s)	
	mass flux in river at SW-004	M r4 =	4.4595 (mg/s)	
	mass flux in river at SW-004A	M r4A =	10.4340 (mg/s)	
	mass flux in river at SW-005	M r5 =	19.6922 (mg/s)	
Convert mass flux to concentration	mass flux in river at USGS Gage	M r6 =	20.8270 (mg/s)	
	mass flux into Colby Lake	M cl =	26.7582 (mg/s)	
			Average Flow	
	concentration in river at SW-001	C r1 =	0.00766 (mg/L)	
	concentration in river at SW-002	C r2 =	0.00806 (mg/L)	
	concentration in river at SW-003	C r3 =	0.00813 (mg/L)	
	concentration in river at SW-004	C r4 =	0.00826 (mg/L)	
concentration in river at SW-004A	C r4A =	0.00843 (mg/L)		
concentration in river at SW-005	C r5 =	0.00847 (mg/L)		
concentration in river at USGS Gage	C r6 =	0.00851 (mg/L)		
concentration in Colby Lake	C cl =	0.00847 (mg/L)		

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1 - Mine Site - Reasonable Alternative 1

Case		Year 12	
Parameter		Beryllium	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0001 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0001 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0001 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0001 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0001 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0001 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0001 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0001 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0001 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0001 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0001 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0001 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0001 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0001 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0001 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0001 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0001 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0001 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0002 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0002 (mg/L)
	concentration of liner leakage from LOSEP	C_gC4LO =	0.0023 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	- (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0002 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0002 (mg/L)
	concentration of liner leakage from LOSEP sumps	C_gC4LOs =	0.0023 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	- (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0001 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0001 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0001 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0004 (mg/L)
Convert concentration to mass flux	Average Flow		
	mass flux of surface water into SW-001	M_s1 =	0.01279 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00074 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.00283 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	0.01490 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.00126 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.00436 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00043 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.01627 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.00128 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSEP	M_gC4LO =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	- (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSEP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00000 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	0.06568 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.00568 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.00005 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	0.10221 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.00931 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.01098 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.00193 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	0.06667 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.00480 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00110 (mg/s)
Mass balance at each node	Average Flow		
	mass flux in river at SW-001	M_r1 =	0.0164 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.0325 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.0373 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.0549 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.1263 (mg/s)
	mass flux in river at SW-005	M_r5 =	0.2378 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	0.2507 (mg/s)
Convert mass flux to concentration	Average Flow		
	concentration in river at SW-001	C_r1 =	0.00010 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00010 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00010 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00010 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00010 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00010 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00010 (mg/L)
	concentration in Colby Lake	C_cl =	0.00010 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1 - Mine Site - Reasonable Alternative 1

Case Parameter	Year 12 Calcium			
Input concentration data	concentration of surface water into SW-001	C s1 =	17.0000 (mg/L)	
	concentration of surface water into SW-002	C s2 =	17.0000 (mg/L)	
	concentration of surface water into SW-003	C s3 =	17.0000 (mg/L)	
	concentration of surface water into SW-004	C s4 =	17.0000 (mg/L)	
	concentration of surface water into SW-004A	C s4A =	17.0000 (mg/L)	
	concentration of surface water into SW-005	C s5 =	17.0000 (mg/L)	
	concentration of surface water into USGS Gage	C s6 =	17.0000 (mg/L)	
	concentration of surface water into Colby Lake	C scl =	17.0000 (mg/L)	
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	17.0000 (mg/L)	
	concentration of surface water discharges from upstream of PM-1	C sns =	24.5000 (mg/L)	
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)	
	concentration of ground water into SW-001	C g1 =	14.7900 (mg/L)	
	concentration of ground water into SW-002	C g2 =	14.7900 (mg/L)	
	concentration of ground water into SW-003	C g3 =	14.7900 (mg/L)	
	concentration of ground water into SW-004	C g4 =	14.7900 (mg/L)	
	concentration of ground water into SW-004A	C g4A =	14.7900 (mg/L)	
	concentration of ground water into SW-005	C g5 =	14.7900 (mg/L)	
	concentration of ground water into USGS Gage	C g6 =	14.7900 (mg/L)	
	concentration of ground water into Colby Lake	C gcl =	14.7900 (mg/L)	
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)	
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)	
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	540.0000 (mg/L)	
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	540.0000 (mg/L)	
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	540.0000 (mg/L)	
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	540.0000 (mg/L)	
	concentration of liner leakage from LOSP	C gC4LO =	480.0000 (mg/L)	
	concentration of seepage from Overburden (Storage)	C gOS =	9.3700 (mg/L)	
	concentration of seepage from Overburden (Cat 1)	C gO12 =	15.8000 (mg/L)	
	concentration of liner leakage from Cat 1 sumps	C gC12s =	540.0000 (mg/L)	
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	540.0000 (mg/L)	
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	540.0000 (mg/L)	
	concentration of liner leakage from Cat 4 sumps	C gC4s =	540.0000 (mg/L)	
	concentration of liner leakage from LOSP sumps	C gC4LOs =	480.0000 (mg/L)	
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	9.3700 (mg/L)	
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)	
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	14.7900 (mg/L)	
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	14.7900 (mg/L)	
	concentration of leakage from RTH Pond - PW3	C gRTHp =	14.7900 (mg/L)	
	concentration of liner leakage from WWTF ponc	C_gWTFp =	387.6558 (mg/L)	
				Average Flow
	Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	2,174.76906 (mg/s)
		mass flux of ground water into SW-001	M g1 =	75.34026 (mg/s)
mass flux of surface discharges from upstream of PM-1		M sns =	693.35000 (mg/s)	
mass flux of surface water into SW-002		M s2 =	2,533.75959 (mg/s)	
mass flux of ground water into SW-002		M g2 =	128.31472 (mg/s)	
mass flux of surface water into SW-003		M s3 =	741.05804 (mg/s)	
mass flux of ground water into SW-003		M g3 =	44.28201 (mg/s)	
mass flux of seepage from East Pit to SW-003		M gep_003 =	#N/A (mg/s)	
mass flux of liner leakage from Cat 2/3 stockpile to SW-003		M gC3_003 =	0.83361 (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-003		M gC3LO_003 =	0.07291 (mg/s)	
mass flux of liner leakage from Cat 2/3 sumps to SW-003		M gC3s_003 =	0.00044 (mg/s)	
mass flux of surface water into SW-004		M s4 =	2,765.69289 (mg/s)	
mass flux of ground water into SW-004		M g4 =	130.23821 (mg/s)	
mass flux of seepage from East Pit to SW-004		M gep_004 =	#N/A (mg/s)	
mass flux of seepage from West Pit		M gwp =	#N/A (mg/s)	
mass flux of liner leakage from Cat 2/3 stockpile to SW-004		M gC3_004 =	- (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-004		M gC3LO_004 =	0.07291 (mg/s)	
mass flux of liner leakage from Cat 4 stockpile		M gC4 =	0.13491 (mg/s)	
mass flux of liner leakage from LOSP		M gC4LO =	0.10326 (mg/s)	
mass flux of seepage from Overburden (Storage)		M gOS =	20.27794 (mg/s)	
mass flux of liner leakage from Cat 3LO sumps to SW-004		M gC3LOs_004 =	0.00042 (mg/s)	
mass flux of liner leakage from Cat 4 sumps		M gC4s =	0.00038 (mg/s)	
mass flux of liner leakage from LOSP sumps		M gC4LOs =	0.00064 (mg/s)	
mass flux of seepage from Overburden Ponds - PW1		M gOp1 =	5.01400 (mg/s)	
mass flux of leakage from Haul Road Pond - PW2		M gHRp2 =	0.00563 (mg/s)	
mass flux of leakage from Haul Road Pond - PW4		M gHRp4 =	0.01206 (mg/s)	
mass flux of leakage from RTH Pond - PW3		M gRTHp =	0.00000 (mg/s)	
mass flux of liner leakage from WWTF pond		M gWTFp =	0.56250 (mg/s)	
mass flux of surface water into SW-004A		M s4A =	11,165.23253 (mg/s)	
mass flux of ground water into SW-004A		M g4A =	579.77077 (mg/s)	
mass flux of West Pit overflow		M sms =	#N/A (mg/s)	
mass flux of liner leakage from Cat 1 stockpile		M gC12 =	131.70266 (mg/s)	
mass flux of liner leakage from Cat 1 sumps		M gC12s =	0.01183 (mg/s)	
mass flux of seepage from Overburden (Cat 1)		M gO12 =	28.06213 (mg/s)	
mass flux of seepage from Overburden Pond - PW7		M gOp7 =	#N/A (mg/s)	
mass flux of surface water into SW-005		M s5 =	17,376.27395 (mg/s)	
mass flux of ground water into SW-005		M g5 =	950.12439 (mg/s)	
mass flux of surface water into USGS Gage		M s6 =	1,866.61427 (mg/s)	
mass flux of ground water into USGS Gage		M g6 =	196.72179 (mg/s)	
mass flux of surface water into Colby Lake		M scl =	11,334.71600 (mg/s)	
mass flux of ground water into Colby Lake		M gcl =	489.71169 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP		M shl =	187.62900 (mg/s)	
			Average Flow	
Mass balance at each node	mass flux in river at SW-001	M r1 =	2,943.4593 (mg/s)	
	mass flux in river at SW-002	M r2 =	5,605.5336 (mg/s)	
	mass flux in river at SW-003	M r3 =	6,391.7806 (mg/s)	
	mass flux in river at SW-004	M r4 =	9,313.8964 (mg/s)	
	mass flux in river at SW-004A	M r4A =	21,218.6763 (mg/s)	
	mass flux in river at SW-005	M r5 =	39,545.0746 (mg/s)	
	mass flux in river at USGS Gage	M r6 =	41,608.4107 (mg/s)	
mass flux into Colby Lake	M cl =	53,620.4674 (mg/s)		
Convert mass flux to concentration	concentration in river at SW-001	C r1 =	18.24591 (mg/L)	
	concentration in river at SW-002	C r2 =	17.56989 (mg/L)	
	concentration in river at SW-003	C r3 =	17.48158 (mg/L)	
	concentration in river at SW-004	C r4 =	17.25353 (mg/L)	
	concentration in river at SW-004A	C r4A =	17.14192 (mg/L)	
	concentration in river at SW-005	C r5 =	17.01450 (mg/L)	
	concentration in river at USGS Gage	C r6 =	17.00176 (mg/L)	
	concentration in Colby Lake	C cl =	16.97819 (mg/L)	



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1 - Mine Site - Reasonable Alternative 1

Case		Year 12	
Parameter		Cadmium	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0001 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0001 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0001 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0001 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0001 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0001 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0001 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0001 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0001 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0001 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0001 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0001 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0001 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0001 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0001 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0001 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0001 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0001 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0002 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0002 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0149 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0001 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0002 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0002 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0149 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0001 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0001 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0001 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0001 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0010 (mg/L)
		Average Flow	
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	0.01279 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00051 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.00283 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	0.01490 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.00087 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.00436 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00030 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.01627 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.00088 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00013 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00003 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00000 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	0.06568 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.00392 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.00004 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	0.10221 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.00642 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.01098 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.00133 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	0.06667 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.00331 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00110 (mg/s)
		Average Flow	
Mass balance at each node	mass flux in river at SW-001	M_r1 =	0.0161 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.0319 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.0366 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.0539 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.1235 (mg/s)
	mass flux in river at SW-005	M_r5 =	0.2322 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	0.2445 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	0.3156 (mg/s)
			Average Flow
	concentration in river at SW-001	C_r1 =	0.00010 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00010 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00010 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00010 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00010 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00010 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00010 (mg/L)
	concentration in Colby Lake	C_cl =	0.00010 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1 - Mine Site - Reasonable Alternative 1

Case Parameter	Year 12 Chloride		
Input concentration data	concentration of surface water into SW-001	C s1 =	8.0000 (mg/L)
	concentration of surface water into SW-002	C s2 =	8.0000 (mg/L)
	concentration of surface water into SW-003	C s3 =	8.0000 (mg/L)
	concentration of surface water into SW-004	C s4 =	8.0000 (mg/L)
	concentration of surface water into SW-004A	C s4A =	8.0000 (mg/L)
	concentration of surface water into SW-005	C s5 =	8.0000 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	8.0000 (mg/L)
	concentration of surface water into Colby Lake	C scl =	8.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	8.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	1.6000 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	6.6000 (mg/L)
	concentration of ground water into SW-002	C g2 =	6.6000 (mg/L)
	concentration of ground water into SW-003	C g3 =	6.6000 (mg/L)
	concentration of ground water into SW-004	C g4 =	6.6000 (mg/L)
	concentration of ground water into SW-004A	C g4A =	6.6000 (mg/L)
	concentration of ground water into SW-005	C g5 =	6.6000 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	6.6000 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	6.6000 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	71.4445 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	48.2729 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	46.0806 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	3.2702 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	1.2896 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	5.3500 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	2.3300 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	71.4445 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	48.2729 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	46.0806 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	3.2702 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	1.2896 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	5.3500 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	6.6000 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	6.6000 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	6.6000 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	30.1422 (mg/L)
Convert concentration to mass flux	Average Flow		
	mass flux of surface water into SW-001	M s1 =	1,023.42074 (mg/s)
	mass flux of ground water into SW-001	M g1 =	33.62040 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	45.28000 (mg/s)
	mass flux of surface water into SW-002	M s2 =	1,192.35746 (mg/s)
	mass flux of ground water into SW-002	M g2 =	57.26012 (mg/s)
	mass flux of surface water into SW-003	M s3 =	348.73320 (mg/s)
	mass flux of ground water into SW-003	M g3 =	19.76074 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.07452 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00622 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00004 (mg/s)
	mass flux of surface water into SW-004	M s4 =	1,301.50253 (mg/s)
	mass flux of ground water into SW-004	M g4 =	58.11847 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00622 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00082 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00028 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	11.57812 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00004 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	2.86285 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00251 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00538 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.04374 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	5,254.22707 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	258.72124 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	17.42487 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00157 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	4.13828 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	8,177.07010 (mg/s)
	mass flux of ground water into SW-005	M g5 =	423.99060 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	878.40672 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	87.78660 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	5,333.98400 (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	218.53260 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl =	88.29600 (mg/s)
Mass balance at each node	Average Flow		
	mass flux in river at SW-001	M r1 =	1,102.3211 (mg/s)
	mass flux in river at SW-002	M r2 =	2,351.9387 (mg/s)
	mass flux in river at SW-003	M r3 =	2,720.5134 (mg/s)
	mass flux in river at SW-004	M r4 =	4,094.6344 (mg/s)
	mass flux in river at SW-004A	M r4A =	9,629.1474 (mg/s)
	mass flux in river at SW-005	M r5 =	18,230.2081 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M r6 =	19,196.4014 (mg/s)
	mass flux into Colby Lake	M cl =	24,837.2140 (mg/s)
	Average Flow		
	concentration in river at SW-001	C r1 =	6.83307 (mg/L)
	concentration in river at SW-002	C r2 =	7.37188 (mg/L)
	concentration in river at SW-003	C r3 =	7.44063 (mg/L)
	concentration in river at SW-004	C r4 =	7.58511 (mg/L)
concentration in river at SW-004A	C r4A =	7.77909 (mg/L)	
concentration in river at SW-005	C r5 =	7.84365 (mg/L)	
concentration in river at USGS Gage	C r6 =	7.84391 (mg/L)	
concentration in Colby Lake	C cl =	7.86437 (mg/L)	

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1 - Mine Site - Reasonable Alternative 1

Case Parameter	Year 12 Cobalt		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0005 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0005 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0005 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0005 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0005 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0005 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0005 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0005 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0005 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0005 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0017 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0017 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0017 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0017 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0017 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0017 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0017 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0017 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.0339 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.0520 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0520 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0520 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	8.0117 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0011 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.0013 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.0339 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.0520 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.0520 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0520 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	8.0117 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0011 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0017 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0017 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0017 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	0.2812 (mg/L)
		Average Flow	
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	0.06396 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.00841 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.01415 (mg/s)
	mass flux of surface water into SW-002	M s2 =	0.07452 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.01432 (mg/s)
	mass flux of surface water into SW-003	M s3 =	0.02180 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.00494 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.00008 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	0.08134 (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.01453 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00001 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00172 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.00240 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00001 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.00059 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00041 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	0.32839 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.06468 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	0.00826 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	0.00231 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	0.51107 (mg/s)
	mass flux of ground water into SW-005	M g5 =	0.10600 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	0.05490 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.02195 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	0.33337 (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	0.05463 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00552 (mg/s)
		Average Flow	
Mass balance at each node	mass flux in river at SW-001	M_r1 =	0.0865 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.1754 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.2022 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.3032 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.7069 (mg/s)
	mass flux in river at SW-005	M_r5 =	1.3239 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	1.4008 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	1.7943 (mg/s)
	concentration in river at SW-001	C_r1 =	0.00054 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00055 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00055 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00056 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00057 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00057 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00057 (mg/L)
	concentration in Colby Lake	C_cl =	0.00057 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1 - Mine Site - Reasonable Alternative 1

Case	Year 12		
Parameter	Copper		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0017 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0017 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0017 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0017 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0017 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0017 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0017 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0017 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shi =	0.0190 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0012 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0030 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0030 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0030 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0030 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0030 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0030 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0030 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0030 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.0920 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.0920 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0920 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0920 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	1.9295 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0214 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.0170 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.0920 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.0920 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.0920 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0920 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	1.9295 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0214 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0030 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0030 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0030 (mg/L)
	concentration of liner leakage from WWTF pond	C gWTFp =	0.2233 (mg/L)
			Average Flow
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	0.21748 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.01503 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.03509 (mg/s)
	mass flux of surface water into SW-002	M s2 =	0.25338 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.02559 (mg/s)
	mass flux of surface water into SW-003	M s3 =	0.07411 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.00883 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.00014 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	0.27657 (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.02598 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00002 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00042 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.04640 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.01147 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00032 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	1.11652 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.11564 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	0.02244 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	0.03019 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	1.73763 (mg/s)
	mass flux of ground water into SW-005	M g5 =	0.18951 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	0.18666 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.03924 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	1.13347 (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	0.09768 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shi =	0.20970 (mg/s)
			Average Flow
Mass balance at each node	mass flux in river at SW-001	M r1 =	0.2676 (mg/s)
	mass flux in river at SW-002	M r2 =	0.5466 (mg/s)
	mass flux in river at SW-003	M r3 =	0.6297 (mg/s)
	mass flux in river at SW-004	M r4 =	0.9909 (mg/s)
	mass flux in river at SW-004A	M r4A =	2.2757 (mg/s)
	mass flux in river at SW-005	M r5 =	4.2028 (mg/s)
	mass flux in river at USGS Gage	M r6 =	4.4287 (mg/s)
	mass flux into Colby Lake	M cl =	5.8695 (mg/s)
			Average Flow
Convert mass flux to concentration	concentration in river at SW-001	C r1 =	0.00166 (mg/L)
	concentration in river at SW-002	C r2 =	0.00171 (mg/L)
	concentration in river at SW-003	C r3 =	0.00172 (mg/L)
	concentration in river at SW-004	C r4 =	0.00184 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00184 (mg/L)
	concentration in river at SW-005	C r5 =	0.00181 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00181 (mg/L)
	concentration in Colby Lake	C cl =	0.00186 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1 - Mine Site - Reasonable Alternative 1

Case Parameter	Year 12 Fluoride		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0700 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0700 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0700 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0700 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0700 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0700 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0700 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0700 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0700 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.1400 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.2800 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.2800 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.2800 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.2800 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.2800 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.2800 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.2800 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.2800 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.0621 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.0621 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0621 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0621 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.0626 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.2239 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.4200 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.0621 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.0621 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.0621 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0621 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0626 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.2239 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.2800 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.2800 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.2800 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	0.1917 (mg/L)
Convert concentration to mass flux			Average Flow
	mass flux of surface water into SW-001	M s1 =	8.95493 (mg/s)
	mass flux of ground water into SW-001	M g1 =	1.42632 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	3.96200 (mg/s)
	mass flux of surface water into SW-002	M s2 =	10.43313 (mg/s)
	mass flux of ground water into SW-002	M g2 =	2.42922 (mg/s)
	mass flux of surface water into SW-003	M s3 =	3.05142 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.83833 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.00010 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	11.38815 (mg/s)
	mass flux of ground water into SW-004	M g4 =	2.46563 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00002 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.48453 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.11981 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00011 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00023 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00028 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	45.97449 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	10.97605 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	0.01514 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	0.74596 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	71.54936 (mg/s)
	mass flux of ground water into SW-005	M g5 =	17.98748 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	7.68606 (mg/s)
mass flux of ground water into USGS Gage	M g6 =	3.72428 (mg/s)	
mass flux of surface water into Colby Lake	M scl =	46.67236 (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	9.27108 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.77259 (mg/s)	
Mass balance at each node			Average Flow
	mass flux in river at SW-001	M_r1 =	14.3433 (mg/s)
	mass flux in river at SW-002	M_r2 =	27.2056 (mg/s)
	mass flux in river at SW-003	M_r3 =	31.0955 (mg/s)
	mass flux in river at SW-004	M_r4 =	45.5542 (mg/s)
	mass flux in river at SW-004A	M_r4A =	103.2659 (mg/s)
	mass flux in river at SW-005	M_r5 =	192.8027 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	204.2130 (mg/s)
	mass flux into Colby Lake	M_cl =	260.9291 (mg/s)
			Average Flow
	concentration in river at SW-001	C_r1 =	0.08891 (mg/L)
	concentration in river at SW-002	C_r2 =	0.08527 (mg/L)
	concentration in river at SW-003	C_r3 =	0.08505 (mg/L)
	concentration in river at SW-004	C_r4 =	0.08439 (mg/L)
concentration in river at SW-004A	C_r4A =	0.08343 (mg/L)	
concentration in river at SW-005	C_r5 =	0.08295 (mg/L)	
concentration in river at USGS Gage	C_r6 =	0.08344 (mg/L)	
concentration in Colby Lake	C_cl =	0.08262 (mg/L)	

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1 - Mine Site - Reasonable Alternative 1

Case Parameter	Year 12 Iron		
Input concentration data	concentration of surface water into SW-001	C s1 =	1.6000 (mg/L)
	concentration of surface water into SW-002	C s2 =	1.6000 (mg/L)
	concentration of surface water into SW-003	C s3 =	1.6000 (mg/L)
	concentration of surface water into SW-004	C s4 =	1.6000 (mg/L)
	concentration of surface water into SW-004A	C s4A =	1.6000 (mg/L)
	concentration of surface water into SW-005	C s5 =	1.6000 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	1.6000 (mg/L)
	concentration of surface water into Colby Lake	C scl =	1.6000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	1.6000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0300 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	2.8440 (mg/L)
	concentration of ground water into SW-002	C g2 =	2.8440 (mg/L)
	concentration of ground water into SW-003	C g3 =	2.8440 (mg/L)
	concentration of ground water into SW-004	C g4 =	2.8440 (mg/L)
	concentration of ground water into SW-004A	C g4A =	2.8440 (mg/L)
	concentration of ground water into SW-005	C g5 =	2.8440 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	2.8440 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	2.8440 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.8100 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.8100 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.8100 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.8100 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	235.0000 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.2255 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.1500 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.8100 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.8100 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.8100 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.8100 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	235.0000 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.2255 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	2.8440 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	2.8440 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	2.8440 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	12.0635 (mg/L)
			Average Flow
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	204.68415 (mg/s)
	mass flux of ground water into SW-001	M g1 =	14.48734 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.84900 (mg/s)
	mass flux of surface water into SW-002	M s2 =	238.47149 (mg/s)
	mass flux of ground water into SW-002	M g2 =	24.67391 (mg/s)
	mass flux of surface water into SW-003	M s3 =	69.74664 (mg/s)
	mass flux of ground water into SW-003	M g3 =	8.51508 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.00125 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00011 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	260.30051 (mg/s)
	mass flux of ground water into SW-004	M g4 =	25.04378 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00011 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00020 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.05055 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.48801 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00031 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.12067 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00108 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00232 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.01750 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	1,050.84541 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	111.48533 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	0.19755 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00002 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	0.26641 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	1,635.41402 (mg/s)
	mass flux of ground water into SW-005	M g5 =	182.70140 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	175.68134 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	37.82804 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	1,066.79680 (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	94.16768 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl =	17.65920 (mg/s)
			Average Flow
Mass balance at each node	mass flux in river at SW-001	M r1 =	220.0205 (mg/s)
	mass flux in river at SW-002	M r2 =	483.1659 (mg/s)
	mass flux in river at SW-003	M r3 =	561.4290 (mg/s)
	mass flux in river at SW-004	M r4 =	847.4540 (mg/s)
	mass flux in river at SW-004A	M r4A =	2,010.2487 (mg/s)
	mass flux in river at SW-005	M r5 =	3,828.3642 (mg/s)
	mass flux in river at USGS Gage	M r6 =	4,041.8736 (mg/s)
mass flux into Colby Lake	M cl =	5,220.4972 (mg/s)	
Convert mass flux to concentration	concentration in river at SW-001	C r1 =	1.36386 (mg/L)
	concentration in river at SW-002	C r2 =	1.51443 (mg/L)
	concentration in river at SW-003	C r3 =	1.53551 (mg/L)
	concentration in river at SW-004	C r4 =	1.56987 (mg/L)
	concentration in river at SW-004A	C r4A =	1.62402 (mg/L)
	concentration in river at SW-005	C r5 =	1.64718 (mg/L)
	concentration in river at USGS Gage	C r6 =	1.65156 (mg/L)
	concentration in Colby Lake	C cl =	1.65300 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1 - Mine Site - Reasonable Alternative 1

Case	Year 12
Parameter	Hardness
Input concentration data	concentration of surface water into SW-001
	concentration of surface water into SW-002
	concentration of surface water into SW-003
	concentration of surface water into SW-004
	concentration of surface water into SW-004A
	concentration of surface water into SW-005
	concentration of surface water into USGS Gage
	concentration of surface water into Colby Lake
	concentration of surface water inflow from Hoyt Lakes WWTP
	concentration of surface water discharges from upstream of PM-1
	concentration of surface water flow from West Pit overflow
	concentration of ground water into SW-001
	concentration of ground water into SW-002
	concentration of ground water into SW-003
	concentration of ground water into SW-004
	concentration of ground water into SW-004A
	concentration of ground water into SW-005
	concentration of ground water into USGS Gage
	concentration of ground water into Colby Lake
	concentration of ground water seepage from East Pit
	concentration of ground water seepage from West Pit
	concentration of liner leakage from Cat 1 stockpile
	concentration of liner leakage from Cat 2/3 stockpile
	concentration of liner leakage from Cat 3LO stockpile
	concentration of liner leakage from Cat 4 stockpile
	concentration of liner leakage from LOSP
	concentration of seepage from Overburden (Storage)
	concentration of seepage from Overburden (Cat 1)
	concentration of liner leakage from Cat 1 sumps
	concentration of liner leakage from Cat 2/3 sumps
	concentration of liner leakage from Cat 3LO sumps
	concentration of liner leakage from Cat 4 sumps
	concentration of liner leakage from LOSP sumps
	concentration of seepage from Overburden Ponds - PW1
	concentration of seepage from Overburden Pond - PW7
	concentration of leakage from Haul Road Pond - PW2
	concentration of leakage from Haul Road Pond - PW4
	concentration of leakage from RTH Pond - PW3
	concentration of liner leakage from WWTF pond
Convert concentration to mass flux	
	mass flux of surface water into SW-001
	mass flux of ground water into SW-001
	mass flux of surface discharges from upstream of PM-1
	mass flux of surface water into SW-002
	mass flux of ground water into SW-002
	mass flux of surface water into SW-003
	mass flux of ground water into SW-003
	mass flux of seepage from East Pit to SW-003
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003
	mass flux of liner leakage from Cat 3LO stockpile to SW-003
	mass flux of liner leakage from Cat 2/3 sumps to SW-003
	mass flux of surface water into SW-004
	mass flux of ground water into SW-004
	mass flux of seepage from East Pit to SW-004
	mass flux of seepage from West Pit
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004
	mass flux of liner leakage from Cat 3LO stockpile to SW-004
	mass flux of liner leakage from Cat 4 stockpile
	mass flux of liner leakage from LOSP
	mass flux of seepage from Overburden (Storage)
	mass flux of liner leakage from Cat 3LO sumps to SW-004
	mass flux of liner leakage from Cat 4 sumps
	mass flux of liner leakage from LOSP sumps
	mass flux of seepage from Overburden Ponds - PW1
	mass flux of leakage from Haul Road Pond - PW2
	mass flux of leakage from Haul Road Pond - PW4
	mass flux of leakage from RTH Pond - PW3
	mass flux of liner leakage from WWTF pond
	mass flux of surface water into SW-004A
	mass flux of ground water into SW-004A
	mass flux of West Pit overflow
	mass flux of liner leakage from Cat 1 stockpile
	mass flux of liner leakage from Cat 1 sumps
	mass flux of seepage from Overburden (Cat 1)
	mass flux of seepage from Overburden Pond - PW7
	mass flux of surface water into SW-005
	mass flux of ground water into SW-005
	mass flux of surface water into USGS Gage
	mass flux of ground water into USGS Gage
	mass flux of surface water into Colby Lake
	mass flux of ground water into Colby Lake
	mass flux of surface water from Hoyt Lakes WWTP
Mass balance at each node	
	mass flux in river at SW-001
	mass flux in river at SW-002
	mass flux in river at SW-003
	mass flux in river at SW-004
	mass flux in river at SW-004A
	mass flux in river at SW-005
Convert mass flux to concentration	
	concentration in river at SW-001
	concentration in river at SW-002
	concentration in river at SW-003
	concentration in river at SW-004
	concentration in river at SW-004A
	concentration in river at SW-005
	concentration in river at USGS Gage
	concentration in Colby Lake



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1 - Mine Site - Reasonable Alternative 1

Case Parameter	Year 12 Potassium		
Input concentration data	concentration of surface water into SW-001	C s1 =	1.3000 (mg/L)
	concentration of surface water into SW-002	C s2 =	1.3000 (mg/L)
	concentration of surface water into SW-003	C s3 =	1.3000 (mg/L)
	concentration of surface water into SW-004	C s4 =	1.3000 (mg/L)
	concentration of surface water into SW-004A	C s4A =	1.3000 (mg/L)
	concentration of surface water into SW-005	C s5 =	1.3000 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	1.3000 (mg/L)
	concentration of surface water into Colby Lake	C scl =	1.3000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	1.3000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	2.7000 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	1.7500 (mg/L)
	concentration of ground water into SW-002	C g2 =	1.7500 (mg/L)
	concentration of ground water into SW-003	C g3 =	1.7500 (mg/L)
	concentration of ground water into SW-004	C g4 =	1.7500 (mg/L)
	concentration of ground water into SW-004A	C g4A =	1.7500 (mg/L)
	concentration of ground water into SW-005	C g5 =	1.7500 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	1.7500 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	1.7500 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	49.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	49.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	49.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	49.0000 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	38.0000 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	2.2600 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	4.4500 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	49.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	49.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	49.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	49.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	38.0000 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	2.2600 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	1.7500 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	1.7500 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	1.7500 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	35.4703 (mg/L)
		Average Flow	
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	166.30587 (mg/s)
	mass flux of ground water into SW-001	M g1 =	8.91450 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	76.41000 (mg/s)
	mass flux of surface water into SW-002	M s2 =	193.75809 (mg/s)
	mass flux of ground water into SW-002	M g2 =	15.18261 (mg/s)
	mass flux of surface water into SW-003	M s3 =	56.66914 (mg/s)
	mass flux of ground water into SW-003	M g3 =	5.23959 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.07564 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00662 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00004 (mg/s)
	mass flux of surface water into SW-004	M s4 =	211.49416 (mg/s)
	mass flux of ground water into SW-004	M g4 =	15.41020 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00662 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.01224 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00817 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	4.89094 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00004 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00003 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00005 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	1.20935 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00067 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00143 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.05147 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	853.81190 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	68.60033 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	11.95080 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00107 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	7.90358 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	1,328.77389 (mg/s)
	mass flux of ground water into SW-005	M g5 =	112.42175 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	142.74109 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	23.27675 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	866.77240 (mg/s)
mass flux of ground water into Colby Lake	M gcl =	57.94425 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	14.34810 (mg/s)	
		Average Flow	
Mass balance at each node	mass flux in river at SW-001	M r1 =	251.6304 (mg/s)
	mass flux in river at SW-002	M r2 =	460.5711 (mg/s)
	mass flux in river at SW-003	M r3 =	522.5521 (mg/s)
	mass flux in river at SW-004	M r4 =	755.6475 (mg/s)
	mass flux in river at SW-004A	M r4A =	1,697.9151 (mg/s)
	mass flux in river at SW-005	M r5 =	3,139.1108 (mg/s)
	mass flux in river at USGS Gage	M r6 =	3,305.1286 (mg/s)
mass flux into Colby Lake	M cl =	4,244.1934 (mg/s)	
		Average Flow	
Convert mass flux to concentration	concentration in river at SW-001	C r1 =	1.55981 (mg/L)
	concentration in river at SW-002	C r2 =	1.44361 (mg/L)
	concentration in river at SW-003	C r3 =	1.42921 (mg/L)
	concentration in river at SW-004	C r4 =	1.39980 (mg/L)
	concentration in river at SW-004A	C r4A =	1.37169 (mg/L)
	concentration in river at SW-005	C r5 =	1.35062 (mg/L)
	concentration in river at USGS Gage	C r6 =	1.35052 (mg/L)
	concentration in Colby Lake	C cl =	1.34387 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1 - Mine Site - Reasonable Alternative 1

Case		Year 12	
Parameter		Magnesium	
Input concentration data	concentration of surface water into SW-001	C_s1 =	8.0000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	8.0000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	8.0000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	8.0000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	8.0000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	8.0000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	8.0000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	8.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	8.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	10.5000 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	8.0200 (mg/L)
	concentration of ground water into SW-002	C_g2 =	8.0200 (mg/L)
	concentration of ground water into SW-003	C_g3 =	8.0200 (mg/L)
	concentration of ground water into SW-004	C_g4 =	8.0200 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	8.0200 (mg/L)
	concentration of ground water into SW-005	C_g5 =	8.0200 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	8.0200 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	8.0200 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	93.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	93.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	93.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	93.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	998.4675 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	4.8800 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	9.0100 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	93.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	93.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	93.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	93.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	998.4675 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	4.8800 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	8.0200 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	8.0200 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	8.0200 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	93.7680 (mg/L)
Convert concentration to mass flux	Average Flow		
	mass flux of surface water into SW-001	M_s1 =	1,023.42074 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	40.85388 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	297.15000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	1,192.35746 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	69.57972 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	348.73320 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	24.01229 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.14357 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.01256 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00007 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	1,301.50253 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	70.62275 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.01256 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.02323 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.21480 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	10.56098 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00007 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00007 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00133 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	2.61135 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00305 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00654 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.13606 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	5,254.22707 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	314.38550 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	22.68213 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00204 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	16.00252 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	8,177.07010 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	515.21282 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	878.40672 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	106.67402 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	5,333.98400 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	265.55022 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	88.29600 (mg/s)
Mass balance at each node	Average Flow		
	mass flux in river at SW-001	M_r1 =	1,361.4246 (mg/s)
	mass flux in river at SW-002	M_r2 =	2,623.3618 (mg/s)
	mass flux in river at SW-003	M_r3 =	2,998.2635 (mg/s)
	mass flux in river at SW-004	M_r4 =	4,381.9588 (mg/s)
	mass flux in river at SW-004A	M_r4A =	9,989.2580 (mg/s)
	mass flux in river at SW-005	M_r5 =	18,681.5410 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	19,666.6217 (mg/s)
	mass flux into Colby Lake	M_cl =	25,354.4519 (mg/s)
	Average Flow		
	concentration in river at SW-001	C_r1 =	8.43920 (mg/L)
	concentration in river at SW-002	C_r2 =	8.22262 (mg/L)
	concentration in river at SW-003	C_r3 =	8.19481 (mg/L)
	concentration in river at SW-004	C_r4 =	8.11736 (mg/L)
	concentration in river at SW-004A	C_r4A =	8.07001 (mg/L)
	concentration in river at SW-005	C_r5 =	8.03784 (mg/L)
	concentration in river at USGS Gage	C_r6 =	8.03605 (mg/L)
	concentration in Colby Lake	C_cl =	8.02814 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1 - Mine Site - Reasonable Alternative 1

Case		Year 12	
Parameter		Manganese	
Input concentration data	concentration of surface water into SW-001	C s1 =	0.1500 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.1500 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.1500 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.1500 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.1500 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.1500 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.1500 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.1500 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.1500 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0086 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.1240 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.1240 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.1240 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.1240 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.1240 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.1240 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.1240 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.1240 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.5115 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.7500 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.7500 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.7500 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	20.5058 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.1604 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.1160 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.5115 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.7500 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.7500 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.7500 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	20.5058 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.1604 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.1240 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.1240 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.1240 (mg/L)
	concentration of liner leakage from WWTF pond	C gWTFp =	1.1341 (mg/L)
		Average Flow	
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	19.18914 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.63166 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.24338 (mg/s)
	mass flux of surface water into SW-002	M s2 =	22.35670 (mg/s)
	mass flux of ground water into SW-002	M g2 =	1.07580 (mg/s)
	mass flux of surface water into SW-003	M s3 =	6.53875 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.37126 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.00116 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00010 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	24.40317 (mg/s)
	mass flux of ground water into SW-004	M g4 =	1.09192 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00010 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00019 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00441 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.34711 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00003 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.08583 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00005 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00010 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00165 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	98.51676 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	4.86082 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	0.12475 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	0.20603 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	153.32006 (mg/s)
	mass flux of ground water into SW-005	M g5 =	7.96588 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	16.47013 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	1.64932 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	100.01220 (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	4.10576 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl =	1.65555 (mg/s)
		Average Flow	
Mass balance at each node	mass flux in river at SW-001	M r1 =	20.0642 (mg/s)
	mass flux in river at SW-002	M r2 =	43.4967 (mg/s)
	mass flux in river at SW-003	M r3 =	50.4079 (mg/s)
	mass flux in river at SW-004	M r4 =	76.3425 (mg/s)
	mass flux in river at SW-004A	M r4A =	180.0509 (mg/s)
	mass flux in river at SW-005	M r5 =	341.3368 (mg/s)
	mass flux in river at USGS Gage	M r6 =	359.4563 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M cl =	465.2298 (mg/s)
			Average Flow
	concentration in river at SW-001	C r1 =	0.12437 (mg/L)
	concentration in river at SW-002	C r2 =	0.13634 (mg/L)
	concentration in river at SW-003	C r3 =	0.13787 (mg/L)
	concentration in river at SW-004	C r4 =	0.14142 (mg/L)
	concentration in river at SW-004A	C r4A =	0.14546 (mg/L)
	concentration in river at SW-005	C r5 =	0.14686 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.14688 (mg/L)
	concentration in Colby Lake	C cl =	0.14731 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1 - Mine Site - Reasonable Alternative 1

Case Parameter	Year 12 Sodium		
Input concentration data	concentration of surface water into SW-001	C s1 =	2.5000 (mg/L)
	concentration of surface water into SW-002	C s2 =	2.5000 (mg/L)
	concentration of surface water into SW-003	C s3 =	2.5000 (mg/L)
	concentration of surface water into SW-004	C s4 =	2.5000 (mg/L)
	concentration of surface water into SW-004A	C s4A =	2.5000 (mg/L)
	concentration of surface water into SW-005	C s5 =	2.5000 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	2.5000 (mg/L)
	concentration of surface water into Colby Lake	C scl =	2.5000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	2.5000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	4.8000 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	13.3300 (mg/L)
	concentration of ground water into SW-002	C g2 =	13.3300 (mg/L)
	concentration of ground water into SW-003	C g3 =	13.3300 (mg/L)
	concentration of ground water into SW-004	C g4 =	13.3300 (mg/L)
	concentration of ground water into SW-004A	C g4A =	13.3300 (mg/L)
	concentration of ground water into SW-005	C g5 =	13.3300 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	13.3300 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	13.3300 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	349.3890 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	651.5481 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	681.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	681.0000 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	125.2850 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	4.6000 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	7.1900 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	349.3890 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	651.5481 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	681.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	681.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	125.2850 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	4.6000 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	13.3300 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	13.3300 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	13.3300 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	461.0094 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	319.81898 (mg/s)
	mass flux of ground water into SW-001	M g1 =	67.90302 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	135.84000 (mg/s)
	mass flux of surface water into SW-002	M s2 =	372.61170 (mg/s)
	mass flux of ground water into SW-002	M g2 =	115.64809 (mg/s)
	mass flux of surface water into SW-003	M s3 =	108.97912 (mg/s)
	mass flux of ground water into SW-003	M g3 =	39.91070 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	1.00581 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.09194 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00053 (mg/s)
	mass flux of surface water into SW-004	M s4 =	406.71954 (mg/s)
	mass flux of ground water into SW-004	M g4 =	117.38170 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.09194 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.17013 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.02695 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	9.95502 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00053 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00048 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00017 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	2.46151 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00507 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.01087 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.66894 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	1,641.94596 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	522.53850 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	85.21381 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00766 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	12.77005 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	2,555.33440 (mg/s)
	mass flux of ground water into SW-005	M g5 =	856.33253 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	274.50210 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	177.30233 (mg/s)
mass flux of surface water into Colby Lake	M scl =	1,666.87000 (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	441.36963 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	27.59250 (mg/s)	
Mass balance at each node	Average Flow		
	mass flux in river at SW-001	M r1 =	523.5620 (mg/s)
	mass flux in river at SW-002	M r2 =	1,011.8218 (mg/s)
	mass flux in river at SW-003	M r3 =	1,161.8099 (mg/s)
	mass flux in river at SW-004	M r4 =	1,699.3027 (mg/s)
	mass flux in river at SW-004A	M r4A =	3,961.7787 (mg/s)
	mass flux in river at SW-005	M r5 =	7,373.4456 (mg/s)
mass flux in river at USGS Gage	M r6 =	7,825.2501 (mg/s)	
mass flux into Colby Lake	M cl =	9,961.0822 (mg/s)	
Convert mass flux to concentration	Average Flow		
	concentration in river at SW-001	C r1 =	3.24546 (mg/L)
	concentration in river at SW-002	C r2 =	3.17144 (mg/L)
	concentration in river at SW-003	C r3 =	3.17756 (mg/L)
	concentration in river at SW-004	C r4 =	3.14787 (mg/L)
	concentration in river at SW-004A	C r4A =	3.20060 (mg/L)
	concentration in river at SW-005	C r5 =	3.17247 (mg/L)
concentration in river at USGS Gage	C r6 =	3.19750 (mg/L)	
concentration in Colby Lake	C cl =	3.15404 (mg/L)	

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1 - Mine Site - Reasonable Alternative 1

Case Parameter	Year 12 Nickel		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0016 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0016 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0016 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0016 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0016 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0016 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0016 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0016 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0033 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0016 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0163 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0163 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0163 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0163 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0163 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0163 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0163 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0163 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.2206 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.8600 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.8600 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.8600 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	103.7980 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0080 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.0190 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.2206 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.8600 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.8600 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.8600 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	103.7980 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0080 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0163 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0163 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0163 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	3.7146 (mg/L)
			Average Flow
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	0.19957 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.08293 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.04387 (mg/s)
	mass flux of surface water into SW-002	M s2 =	0.23251 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.14124 (mg/s)
	mass flux of surface water into SW-003	M s3 =	0.06800 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.04874 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.00133 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00012 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	0.25379 (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.14336 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00012 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00021 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.02233 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.01725 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00014 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.00426 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00001 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00001 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00539 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	1.02457 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.63818 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	0.05380 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	0.03375 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	1.59453 (mg/s)
	mass flux of ground water into SW-005	M g5 =	1.04584 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	0.17129 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.21654 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	1.04013 (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	0.53905 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.03642 (mg/s)
			Average Flow
Mass balance at each node	mass flux in river at SW-001	M r1 =	0.3264 (mg/s)
	mass flux in river at SW-002	M r2 =	0.7001 (mg/s)
	mass flux in river at SW-003	M r3 =	0.8183 (mg/s)
	mass flux in river at SW-004	M r4 =	1.2652 (mg/s)
	mass flux in river at SW-004A	M r4A =	3.0155 (mg/s)
	mass flux in river at SW-005	M r5 =	5.6559 (mg/s)
	mass flux in river at USGS Gage	M r6 =	6.0437 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M cl =	7.6593 (mg/s)
	concentration in river at SW-001	C r1 =	0.00202 (mg/L)
	concentration in river at SW-002	C r2 =	0.00219 (mg/L)
	concentration in river at SW-003	C r3 =	0.00224 (mg/L)
	concentration in river at SW-004	C r4 =	0.00234 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00244 (mg/L)
	concentration in river at SW-005	C r5 =	0.00243 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00247 (mg/L)
	concentration in Colby Lake	C cl =	0.00243 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1 - Mine Site - Reasonable Alternative 1

Case Parameter	Year 12 Lead		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0005 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0005 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0005 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0005 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0005 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0005 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0005 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0005 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0005 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0002 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0011 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0011 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0011 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0011 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0011 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0011 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0011 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0011 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.0264 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.0239 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0278 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0528 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.0528 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0007 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.0264 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.0239 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.0278 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0528 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0528 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0007 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0011 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0011 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0011 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	0.0330 (mg/L)
			Average Flow
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	0.06396 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.00571 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.00425 (mg/s)
	mass flux of surface water into SW-002	M s2 =	0.07452 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.00972 (mg/s)
	mass flux of surface water into SW-003	M s3 =	0.02180 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.00335 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.00004 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	0.08134 (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.00986 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00001 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.00146 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.00036 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00005 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	0.32839 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.04390 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	0.00644 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	0.51107 (mg/s)
	mass flux of ground water into SW-005	M g5 =	0.07195 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	0.05490 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.01490 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	0.33337 (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	0.03708 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.00552 (mg/s)
			Average Flow
Mass balance at each node	mass flux in river at SW-001	M r1 =	0.0739 (mg/s)
	mass flux in river at SW-002	M r2 =	0.1582 (mg/s)
	mass flux in river at SW-003	M r3 =	0.1833 (mg/s)
	mass flux in river at SW-004	M r4 =	0.2764 (mg/s)
	mass flux in river at SW-004A	M r4A =	0.6552 (mg/s)
	mass flux in river at SW-005	M r5 =	1.2382 (mg/s)
	mass flux in river at USGS Gage	M r6 =	1.3080 (mg/s)
mass flux into Colby Lake	M cl =	1.6840 (mg/s)	
			Average Flow
Convert mass flux to concentration	concentration in river at SW-001	C r1 =	0.00046 (mg/L)
	concentration in river at SW-002	C r2 =	0.00050 (mg/L)
	concentration in river at SW-003	C r3 =	0.00050 (mg/L)
	concentration in river at SW-004	C r4 =	0.00051 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00053 (mg/L)
	concentration in river at SW-005	C r5 =	0.00053 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00053 (mg/L)
	concentration in Colby Lake	C cl =	0.00053 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1 - Mine Site - Reasonable Alternative 1

Case		Year 12	
Parameter		Antimony	
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0015 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0015 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0015 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0015 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0015 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0015 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0015 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0015 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0015 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0015 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0015 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0015 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0015 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0015 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0015 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0015 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0015 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0015 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.0800 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.0800 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0800 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0800 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.0603 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0003 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.0004 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.0800 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.0800 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.0800 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0800 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0603 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0003 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0015 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0015 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0015 (mg/L)
	concentration of liner leakage from WWTF pond	C gWTFp =	0.0588 (mg/L)
		Average Flow	
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	0.19189 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.00764 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.04245 (mg/s)
	mass flux of surface water into SW-002	M s2 =	0.22357 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.01301 (mg/s)
	mass flux of surface water into SW-003	M s3 =	0.06539 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.00449 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.00012 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	0.24403 (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.01321 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00002 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.00065 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.00016 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00009 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	0.98517 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.05880 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	0.01951 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	0.00071 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	1.53320 (mg/s)
	mass flux of ground water into SW-005	M g5 =	0.09636 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	0.16470 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.01995 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	1.00012 (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	0.04967 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.01656 (mg/s)
		Average Flow	
Mass balance at each node	mass flux in river at SW-001	M r1 =	0.2420 (mg/s)
	mass flux in river at SW-002	M r2 =	0.4786 (mg/s)
	mass flux in river at SW-003	M r3 =	0.5486 (mg/s)
	mass flux in river at SW-004	M r4 =	0.8068 (mg/s)
	mass flux in river at SW-004A	M r4A =	1.8709 (mg/s)
	mass flux in river at SW-005	M r5 =	3.5005 (mg/s)
	mass flux in river at USGS Gage	M r6 =	3.6852 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M cl =	4.7515 (mg/s)
			Average Flow
	concentration in river at SW-001	C r1 =	0.00150 (mg/L)
	concentration in river at SW-002	C r2 =	0.00150 (mg/L)
	concentration in river at SW-003	C r3 =	0.00150 (mg/L)
	concentration in river at SW-004	C r4 =	0.00149 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00151 (mg/L)
	concentration in river at SW-005	C r5 =	0.00151 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00151 (mg/L)
	concentration in Colby Lake	C cl =	0.00150 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1 - Mine Site - Reasonable Alternative 1

Case		Year 12	
Parameter		Selenium	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0005 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0005 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0005 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0005 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0005 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0005 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0005 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0005 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0005 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0005 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0019 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0019 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0019 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0019 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0019 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0019 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0019 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0019 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0029 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0029 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0029 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0029 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0029 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0004 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.0019 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0029 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0029 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0029 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0029 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0029 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0004 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0019 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0019 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0019 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0026 (mg/L)
		Average Flow	
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	0.06396 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00973 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.01415 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	0.07452 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.01657 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.02180 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00572 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.08134 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.01682 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00096 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00024 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00000 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	0.32839 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.07487 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.00071 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.00337 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	0.51107 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.12270 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.05490 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.02540 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	0.33337 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.06324 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00552 (mg/s)
		Average Flow	
Mass balance at each node	mass flux in river at SW-001	M_r1 =	0.0878 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.1789 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.2065 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.3058 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.7132 (mg/s)
	mass flux in river at SW-005	M_r5 =	1.3469 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	1.4272 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	1.8294 (mg/s)
	concentration in river at SW-001	C_r1 =	0.00054 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00056 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00056 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00057 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00058 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00058 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00058 (mg/L)
	concentration in Colby Lake	C_cl =	0.00058 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1 - Mine Site - Reasonable Alternative 1

Case Parameter	Year 12 Sulfate		
Input concentration data	concentration of surface water into SW-001	C s1 =	9.0000 (mg/L)
	concentration of surface water into SW-002	C s2 =	9.0000 (mg/L)
	concentration of surface water into SW-003	C s3 =	9.0000 (mg/L)
	concentration of surface water into SW-004	C s4 =	9.0000 (mg/L)
	concentration of surface water into SW-004A	C s4A =	9.0000 (mg/L)
	concentration of surface water into SW-005	C s5 =	9.0000 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	9.0000 (mg/L)
	concentration of surface water into Colby Lake	C scl =	9.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	9.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	22.0000 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	16.1300 (mg/L)
	concentration of ground water into SW-002	C g2 =	16.1300 (mg/L)
	concentration of ground water into SW-003	C g3 =	16.1300 (mg/L)
	concentration of ground water into SW-004	C g4 =	16.1300 (mg/L)
	concentration of ground water into SW-004A	C g4A =	16.1300 (mg/L)
	concentration of ground water into SW-005	C g5 =	16.1300 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	16.1300 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	16.1300 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	854.3331 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	2,340.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	2,340.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	2,340.0000 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	9,600.0000 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	35.1700 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	68.3000 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	854.3331 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	2,340.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	2,340.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	2,340.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	9,600.0000 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	35.1700 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	16.1300 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	16.1300 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	16.1300 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	1,882.9951 (mg/L)
			Average Flow
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	1,151.34833 (mg/s)
	mass flux of ground water into SW-001	M g1 =	82.16622 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	622.60000 (mg/s)
	mass flux of surface water into SW-002	M s2 =	1,341.40214 (mg/s)
	mass flux of ground water into SW-002	M g2 =	139.94026 (mg/s)
	mass flux of surface water into SW-003	M s3 =	392.32485 (mg/s)
	mass flux of ground water into SW-003	M g3 =	48.29404 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	3.61231 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.31593 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00189 (mg/s)
	mass flux of surface water into SW-004	M s4 =	1,464.19035 (mg/s)
	mass flux of ground water into SW-004	M g4 =	142.03802 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.31593 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.58460 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	2.06522 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	76.11262 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00180 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00164 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.01279 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	18.81988 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00614 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.01315 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	2.73227 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	5,911.00546 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	632.29902 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	208.36657 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.01872 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	121.30657 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	9,199.20386 (mg/s)
	mass flux of ground water into SW-005	M g5 =	1,036.20733 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	988.20755 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	214.54513 (mg/s)
mass flux of surface water into Colby Lake	M scl =	6,000.73200 (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	534.08043 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	99.33300 (mg/s)	
			Average Flow
Mass balance at each node	mass flux in river at SW-001	M r1 =	1,856.1145 (mg/s)
	mass flux in river at SW-002	M r2 =	3,337.4569 (mg/s)
	mass flux in river at SW-003	M r3 =	3,782.0069 (mg/s)
	mass flux in river at SW-004	M r4 =	5,488.9004 (mg/s)
	mass flux in river at SW-004A	M r4A =	12,361.8967 (mg/s)
	mass flux in river at SW-005	M r5 =	22,597.3079 (mg/s)
	mass flux in river at USGS Gage	M r6 =	23,800.0606 (mg/s)
mass flux into Colby Lake	M cl =	30,434.2060 (mg/s)	
			Average Flow
Convert mass flux to concentration	concentration in river at SW-001	C r1 =	11.50568 (mg/L)
	concentration in river at SW-002	C r2 =	10.46087 (mg/L)
	concentration in river at SW-003	C r3 =	10.34382 (mg/L)
	concentration in river at SW-004	C r4 =	10.16791 (mg/L)
	concentration in river at SW-004A	C r4A =	9.98680 (mg/L)
	concentration in river at SW-005	C r5 =	9.72262 (mg/L)
	concentration in river at USGS Gage	C r6 =	9.72502 (mg/L)
	concentration in Colby Lake	C cl =	9.63658 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1 - Mine Site - Reasonable Alternative 1

Case Parameter	Year 12 Thallium		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0004 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0004 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0004 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0004 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0004 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0004 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0004 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0004 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0004 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0003 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0000 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0000 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0000 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0000 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0000 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0000 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0000 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0000 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0000 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.0001 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0000 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	(mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0001 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0000 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0000 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0000 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0000 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	0.0011 (mg/L)
Convert concentration to mass flux	Average Flow		
	mass flux of surface water into SW-001	M s1 =	0.05117 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.00002 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.00809 (mg/s)
	mass flux of surface water into SW-002	M s2 =	0.05962 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.00003 (mg/s)
	mass flux of surface water into SW-003	M s3 =	0.01744 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.00001 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	0.06508 (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.00004 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.00009 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.00002 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00000 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	0.26271 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.00016 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	0.40885 (mg/s)
	mass flux of ground water into SW-005	M g5 =	0.00026 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	0.04392 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.00005 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	0.26670 (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	0.00013 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00441 (mg/s)
Mass balance at each node	Average Flow		
	mass flux in river at SW-001	M r1 =	0.0593 (mg/s)
	mass flux in river at SW-002	M r2 =	0.1189 (mg/s)
	mass flux in river at SW-003	M r3 =	0.1364 (mg/s)
	mass flux in river at SW-004	M r4 =	0.2316 (mg/s)
	mass flux in river at SW-004A	M r4A =	0.4645 (mg/s)
	mass flux in river at SW-005	M r5 =	0.8736 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	0.9176 (mg/s)
	mass flux into Colby Lake	M cl =	1.1888 (mg/s)
	Average Flow		
	concentration in river at SW-001	C r1 =	0.00037 (mg/L)
	concentration in river at SW-002	C r2 =	0.00037 (mg/L)
	concentration in river at SW-003	C r3 =	0.00037 (mg/L)
	concentration in river at SW-004	C r4 =	0.00037 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00038 (mg/L)
	concentration in river at SW-005	C r5 =	0.00038 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00037 (mg/L)
	concentration in Colby Lake	C cl =	0.00038 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1 - Mine Site - Reasonable Alternative 1

Case		Year 12	
Parameter		Vanadium	
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0009 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0009 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0009 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0009 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0009 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0009 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0009 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0009 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0009 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0043 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0043 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0043 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0043 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0043 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0043 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0043 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0043 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0043 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.1317 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	1.1626 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	1.3498 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.4270 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.0309 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0017 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.0014 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.1317 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	1.1626 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	1.3498 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.4270 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0309 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0017 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0043 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0043 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0043 (mg/L)
	concentration of liner leakage from WWTF pond	C gWTFp =	1.0181 (mg/L)
		Average Flow	
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	0.11513 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.02190 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.12169 (mg/s)
	mass flux of surface water into SW-002	M s2 =	0.13414 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.03731 (mg/s)
	mass flux of surface water into SW-003	M s3 =	0.03923 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.01287 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep 003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3 003 =	0.00179 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO 003 =	0.00018 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s 003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	0.14642 (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.03787 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep 004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3 004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO 004 =	0.00018 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00011 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.00374 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs 004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.00093 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00148 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	0.59110 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.16856 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	0.03212 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	0.00249 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	0.91992 (mg/s)
	mass flux of ground water into SW-005	M g5 =	0.27624 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	0.09882 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.05719 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	0.60007 (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	0.14238 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.00993 (mg/s)
		Average Flow	
Mass balance at each node	mass flux in river at SW-001	M r1 =	0.2587 (mg/s)
	mass flux in river at SW-002	M r2 =	0.4302 (mg/s)
	mass flux in river at SW-003	M r3 =	0.4843 (mg/s)
	mass flux in river at SW-004	M r4 =	0.6750 (mg/s)
	mass flux in river at SW-004A	M r4A =	1.4693 (mg/s)
	mass flux in river at SW-005	M r5 =	2.6654 (mg/s)
	mass flux in river at USGS Gage	M r6 =	2.8214 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M cl =	3.5738 (mg/s)
	concentration in river at SW-001	C r1 =	0.00160 (mg/L)
	concentration in river at SW-002	C r2 =	0.00135 (mg/L)
	concentration in river at SW-003	C r3 =	0.00132 (mg/L)
	concentration in river at SW-004	C r4 =	0.00125 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00119 (mg/L)
	concentration in river at SW-005	C r5 =	0.00115 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00115 (mg/L)
	concentration in Colby Lake	C cl =	0.00113 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1 - Mine Site - Reasonable Alternative 1

Case	Year 12		
Parameter	Zinc		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0160 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0160 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0160 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0160 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0160 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0160 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0160 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0160 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0620 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0073 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0275 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0275 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0275 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0275 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0275 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0275 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0275 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0275 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.0900 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.0900 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0900 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0900 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	26.0000 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0046 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.0030 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.0900 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.0900 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.0900 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0900 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	26.0000 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0046 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0275 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0275 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0275 (mg/L)
	concentration of liner leakage from WWTF ponc	C gWTFp =	1.2883 (mg/L)
			Average Flow
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	2.04684 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.14009 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.20744 (mg/s)
	mass flux of surface water into SW-002	M s2 =	2.38471 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.23858 (mg/s)
	mass flux of surface water into SW-003	M s3 =	0.69747 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.08234 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.00014 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	2.60301 (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.24216 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00002 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00559 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.00987 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00003 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.00244 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00001 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00002 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00187 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	10.50845 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	1.07801 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	0.02195 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	0.00533 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	16.35414 (mg/s)
	mass flux of ground water into SW-005	M g5 =	1.76663 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	1.75681 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.36578 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	10.66797 (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	0.91055 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.68429 (mg/s)
			Average Flow
Mass balance at each node	mass flux in river at SW-001	M r1 =	2.3944 (mg/s)
	mass flux in river at SW-002	M r2 =	5.0177 (mg/s)
	mass flux in river at SW-003	M r3 =	5.7976 (mg/s)
	mass flux in river at SW-004	M r4 =	8.6627 (mg/s)
	mass flux in river at SW-004A	M r4A =	20.2764 (mg/s)
	mass flux in river at SW-005	M r5 =	38.3972 (mg/s)
	mass flux in river at USGS Gage	M r6 =	40.5198 (mg/s)
mass flux into Colby Lake	M cl =	52.7826 (mg/s)	
			Average Flow
Convert mass flux to concentration	concentration in river at SW-001	C r1 =	0.01484 (mg/L)
	concentration in river at SW-002	C r2 =	0.01573 (mg/L)
	concentration in river at SW-003	C r3 =	0.01586 (mg/L)
	concentration in river at SW-004	C r4 =	0.01605 (mg/L)
	concentration in river at SW-004A	C r4A =	0.01638 (mg/L)
	concentration in river at SW-005	C r5 =	0.01652 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.01656 (mg/L)
concentration in Colby Lake	C cl =	0.01671 (mg/L)	



## Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

### FLOWS

Case Flow	Year 12 High Flow Conditions (10-yr, 24-hr rainfall event)			
Total flow in Partridge River	flow in river at SW-001	Q_r1_H =	85.35	(cfs)
	flow in river at SW-002	Q_r2_H =	172.43	(cfs)
	flow in river at SW-003	Q_r3_H =	227.79	(cfs)
	flow in river at SW-004	Q_r4_H =	284.06	(cfs)
	flow in river at SW-004A	Q_r4a_H =	918.62	(cfs)
	flow in river at SW-005	Q_r5_H =	1,083.94	(cfs)
	flow in river at USGS Gage	Q_r6_H =	1,085.39	(cfs)
	total flow into Colby Lake	Q_cl_H =	1,422.92	(cfs)
	flow check	Q_ck_H =	1,422.92	(cfs)
Input flow data	surface water flow into SW-001	Q_s1_H =	84.17	(cfs)
	surface water flow into SW-002	Q_s2_H =	86.77	(cfs)
	surface water flow into SW-003	Q_s3_H =	55.26	(cfs)
	surface water flow into SW-004	Q_s4_H =	55.86	(cfs)
	surface water flow into SW-004A	Q_s4a_H =	632.98	(cfs)
	surface water flow into SW-005	Q_s5_H =	163.05	(cfs)
	surface water flow into USGS Gage	Q_s6_H =	0.98	(cfs)
	surface water flow into Colby Lake	Q_scl_H =	335.97	(cfs)
	surface water inflow from Hoyt Lakes WWTP	Q_shl_H =	0.39	(cfs)
	surface water inflow from Northshore	Q_sns_H =	1.00	(cfs)
	surface water flow from West Pit overflow	Q_sms_H =	-	(cfs)
	ground water flow into SW-001	Q_g1_H =	0.18	(cfs)
	ground water flow into SW-002	Q_g2_H =	0.31	(cfs)
	ground water flow into SW-003	Q_g3_H =	0.11	(cfs)
	ground water flow into SW-004	Q_g4_H =	0.31	(cfs)
	ground water flow into SW-004A	Q_g4a_H =	1.39	(cfs)
	ground water flow into SW-005	Q_g5_H =	2.27	(cfs)
	ground water flow into USGS Gage	Q_g6_H =	0.47	(cfs)
	ground water flow into Colby Lake	Q_gcl_H =	1.17	(cfs)
	ground water seepage from East Pit to SW-003	Q_gep_003_H =	-	(cfs)
	ground water seepage from East Pit to SW-004	Q_gep_004_H =	-	(cfs)
	ground water seepage from West Pit	Q_gwp_H =	-	(cfs)
	ground water liner leakage from Cat 1 stockpile	Q_gC12_H =	0.0251	(cfs)
	ground water liner leakage from Cat 2/3 stockpile to SW-003	Q_gC3_003_H =	0.0003	(cfs)
	ground water liner leakage from Cat 2/3 stockpile to SW-004	Q_gC3_004_H =	-	(cfs)
	ground water liner leakage from Cat 3LO stockpile to SW-003	Q_gC3LO_003_H =	0.0001	(cfs)
	ground water liner leakage from Cat 3LO stockpile to SW-004	Q_gC3LO_004_H =	0.0001	(cfs)
	ground water liner leakage from Cat 4 stockpile	Q_gC4_H =	0.0002	(cfs)
	ground water liner leakage from LOSP	Q_gC4LO_H =	0.0002	(cfs)
	ground water seepage from Overburden Storage	Q_gOS_H =	0.0765	(cfs)
	ground water seepage from Overburden (Cat 1)	Q_gO12_H =	0.1674	(cfs)
	ground water liner leakage from Cat 1 sumps	Q_gC12s_H =	0.0000	(cfs)
	ground water liner leakage from Cat 2/3 sumps	Q_gC3s_H =	0.0000	(cfs)
	ground water liner leakage from Cat 3LO sumps	Q_gC3LOs_H =	0.0000	(cfs)
	ground water liner leakage from Cat 4 sumps	Q_gC4s_H =	0.0000	(cfs)
	ground water liner leakage from LOSP sumps	Q_gC4LOs_H =	0.0000	(cfs)
	ground water seepage from Overburden pond - PW1	Q_gOp1_H =	0.0189	(cfs)
	ground water seepage from Overburden pond - PW7	Q_gOp7_H =	-	(cfs)
	ground water leakage from Haul Road pond - PW2	Q_gHRp2_H =	0.0000	(cfs)
	ground water leakage from Haul Road pond - PW4	Q_gHRp4_H =	0.0000	(cfs)
	ground water leakage from RTH pond - PW3	Q_gRTHp_H =	0.0000	(cfs)
	ground water liner leakage from WWTF pond	Q_gWTFp_H =	0.0001	(cfs)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 12 Silver		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0001 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0001 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0001 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0001 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0001 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0001 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0001 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0001 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0001 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0001 (mg/L)
	concentration of surface water from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0006 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0006 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0006 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0006 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0006 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0006 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0006 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0006 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.0007 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.0007 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0007 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0007 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.0007 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	- (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.0007 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.0007 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.0007 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0007 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0007 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	- (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0006 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0006 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0006 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	0.0008 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	0.23820 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.00280 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.00340 (mg/s)
	mass flux of surface water into SW-002	M s2 =	0.24556 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.00477 (mg/s)
	mass flux of surface water into SW-003	M s3 =	0.15639 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.00165 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	0.15809 (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.00484 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	- (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00000 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	1.79133 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.02156 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	0.00050 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	0.46143 (mg/s)
	mass flux of ground water into SW-005	M g5 =	0.03533 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	0.00278 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.00732 (mg/s)
mass flux of surface water into Colby Lake	M scl =	0.95080 (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	0.01821 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.00110 (mg/s)	
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M r1 =	0.2444 (mg/s)
	mass flux in river at SW-002	M r2 =	0.4947 (mg/s)
	mass flux in river at SW-003	M r3 =	0.6528 (mg/s)
	mass flux in river at SW-004	M r4 =	0.8157 (mg/s)
	mass flux in river at SW-004A	M r4A =	2.6291 (mg/s)
	mass flux in river at SW-005	M r5 =	3.1259 (mg/s)
	mass flux in river at USGS Gage	M r6 =	3.1360 (mg/s)
	mass flux into Colby Lake	M cl =	4.1061 (mg/s)
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C r1 =	0.00010 (mg/L)
	concentration in river at SW-002	C r2 =	0.00010 (mg/L)
	concentration in river at SW-003	C r3 =	0.00010 (mg/L)
	concentration in river at SW-004	C r4 =	0.00010 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00010 (mg/L)
	concentration in river at SW-005	C r5 =	0.00010 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00010 (mg/L)
	concentration in Colby Lake (H)	C cl =	0.00011 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case		Year 12	
Parameter	Aluminum		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0700 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0700 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0700 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0700 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0700 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0700 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0700 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0700 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0700 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0173 (mg/L)
	concentration of surface water from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.1250 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.1250 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.1250 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.1250 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.1250 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.1250 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.1250 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.1250 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	1.6800 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	1.6800 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	1.6800 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	1.6800 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	83.0000 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.4106 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.1400 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	1.6800 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	1.6800 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	1.6800 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	1.6800 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	83.0000 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.4106 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.1250 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.1250 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.1250 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	4.9728 (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M_s1 =	166.74077 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.63675 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.48959 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	171.89081 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	1.08447 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	109.46971 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.37426 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.01348 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00641 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	110.66350 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	1.10073 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00641 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.01186 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.50468 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.88859 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00011 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.21972 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00005 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00010 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00722 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	1,253.92763 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	4.90002 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	1.19551 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00004 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.66310 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	323.00050 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	8.03013 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	1.94676 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	1.66263 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	665.55657 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	4.13888 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.77259 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	167.8671 (mg/s)
	mass flux in river at SW-002	M_r2 =	340.8424 (mg/s)
	mass flux in river at SW-003	M_r3 =	450.7063 (mg/s)
	mass flux in river at SW-004	M_r4 =	564.1092 (mg/s)
	mass flux in river at SW-004A	M_r4A =	1,824.7955 (mg/s)
	mass flux in river at SW-005	M_r5 =	2,155.8261 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	2,159.4355 (mg/s)
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C_r1 =	0.06950 (mg/L)
	concentration in river at SW-002	C_r2 =	0.06985 (mg/L)
	concentration in river at SW-003	C_r3 =	0.06991 (mg/L)
	concentration in river at SW-004	C_r4 =	0.07017 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.07019 (mg/L)
	concentration in river at SW-005	C_r5 =	0.07028 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.07030 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.07185 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case		Year 12	
Parameter		Arsenic	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0021 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0021 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0021 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0021 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0021 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0021 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0021 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0021 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0021 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0065 (mg/L)
	concentration of surface water from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0022 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0022 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0022 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0022 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0022 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0022 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0022 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0022 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.1552 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.7100 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.7100 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.7100 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.1011 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0016 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.0027 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.1552 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.7100 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.7100 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.7100 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.1011 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0016 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0022 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0022 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0022 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.4488 (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M_s1 =	5.02604 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.01100 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.18395 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	5.18128 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.01874 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	3.29973 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00647 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00570 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00271 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	3.33571 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.01902 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00271 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00501 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00061 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00338 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00083 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00065 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	37.79696 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.08467 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.11044 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.01279 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	9.73616 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.13876 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.05868 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.02873 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	20.06178 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.07152 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.02329 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	5.2210 (mg/s)
	mass flux in river at SW-002	M_r2 =	10.4210 (mg/s)
	mass flux in river at SW-003	M_r3 =	13.7356 (mg/s)
	mass flux in river at SW-004	M_r4 =	17.1036 (mg/s)
	mass flux in river at SW-004A	M_r4A =	55.1084 (mg/s)
	mass flux in river at SW-005	M_r5 =	64.9833 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	65.0707 (mg/s)
	mass flux into Colby Lake	M_cl =	85.2273 (mg/s)
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C_r1 =	0.00216 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00214 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00213 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00213 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00212 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00212 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00212 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.00215 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case		Year 12	
Parameter		Boron	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0450 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0450 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0450 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0450 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0450 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0450 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0450 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0450 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0450 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0960 (mg/L)
	concentration of surface water from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0870 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0870 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0870 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0870 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0870 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0870 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0870 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0870 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.5810 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.7600 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.7600 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.7600 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.7600 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0622 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.0370 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.5810 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.7600 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.7600 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.7600 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.7600 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0622 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0870 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0870 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0870 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.5654 (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M_s1 =	107.19050 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.44318 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	2.71680 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	110.50123 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.75479 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	70.37339 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.26048 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00610 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00290 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	71.14082 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.76611 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00290 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00537 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00462 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.13461 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.03328 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00003 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00007 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00082 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	806.09633 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	3.41042 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.41347 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.17525 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	207.64318 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	5.58897 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	1.25149 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	1.15719 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	427.85780 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	2.88066 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.49667 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	110.3505 (mg/s)
	mass flux in river at SW-002	M_r2 =	221.6065 (mg/s)
	mass flux in river at SW-003	M_r3 =	292.2494 (mg/s)
	mass flux in river at SW-004	M_r4 =	364.3380 (mg/s)
	mass flux in river at SW-004A	M_r4A =	1,174.3335 (mg/s)
	mass flux in river at SW-005	M_r5 =	1,387.6656 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	1,390.0743 (mg/s)
	mass flux into Colby Lake	M_cl =	1,821.3094 (mg/s)
	High Flow		
	concentration in river at SW-001	C_r1 =	0.04569 (mg/L)
	concentration in river at SW-002	C_r2 =	0.04541 (mg/L)
	concentration in river at SW-003	C_r3 =	0.04533 (mg/L)
	concentration in river at SW-004	C_r4 =	0.04532 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.04518 (mg/L)
	concentration in river at SW-005	C_r5 =	0.04524 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.04525 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.04657 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case	Year 12		
Parameter	Barium		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0077 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0077 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0077 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0077 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0077 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0077 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0077 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0077 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0077 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0050 (mg/L)
	concentration of surface water from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0219 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0219 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0219 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0219 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0219 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0219 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0219 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0219 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.1900 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.1900 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.1900 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.1900 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.1900 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0168 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.0140 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.1900 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.1900 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.1900 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.1900 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.1900 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0168 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0219 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0219 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0219 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.1446 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	18.29384 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.11166 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.14150 (mg/s)
	mass flux of surface water into SW-002	M s2 =	18.85888 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.19017 (mg/s)
	mass flux of surface water into SW-003	M s3 =	12.01039 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.06563 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.00152 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00073 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	12.14137 (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.19302 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00073 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00134 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00116 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.03643 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.00901 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00001 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00002 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00021 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	137.57377 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.85927 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	0.13521 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	0.06631 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	35.43777 (mg/s)
	mass flux of ground water into SW-005	M g5 =	1.40816 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	0.21359 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.29156 (mg/s)
mass flux of surface water into Colby Lake	M scl =	73.02106 (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	0.72579 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.08476 (mg/s)	
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M r1 =	18.5470 (mg/s)
	mass flux in river at SW-002	M r2 =	37.5961 (mg/s)
	mass flux in river at SW-003	M r3 =	49.6743 (mg/s)
	mass flux in river at SW-004	M r4 =	62.0576 (mg/s)
	mass flux in river at SW-004A	M r4A =	200.6922 (mg/s)
	mass flux in river at SW-005	M r5 =	237.5381 (mg/s)
	mass flux in river at USGS Gage	M r6 =	238.0433 (mg/s)
mass flux into Colby Lake	M cl =	311.8749 (mg/s)	
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C r1 =	0.00768 (mg/L)
	concentration in river at SW-002	C r2 =	0.00770 (mg/L)
	concentration in river at SW-003	C r3 =	0.00771 (mg/L)
	concentration in river at SW-004	C r4 =	0.00772 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00772 (mg/L)
	concentration in river at SW-005	C r5 =	0.00774 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00775 (mg/L)
	concentration in Colby Lake (H)	C cl =	0.00812 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case		Year 12	
Parameter		Beryllium	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0001 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0001 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0001 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0001 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0001 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0001 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0001 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0001 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0001 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0001 (mg/L)
	concentration of surface water from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0001 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0001 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0001 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0001 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0001 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0001 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0001 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0001 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0002 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0002 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0023 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	- (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0002 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0002 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0023 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	- (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0001 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0001 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0001 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0004 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	0.23820 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00074 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.00283 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	0.24556 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.00126 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.15639 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00043 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.15809 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.00128 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	- (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00000 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	1.79133 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.00568 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.00014 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	0.46143 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.00931 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.00278 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.00193 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	0.95080 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.00480 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00110 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	0.2418 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.4886 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.6454 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.8048 (mg/s)
	mass flux in river at SW-004A	M_r4A =	2.6019 (mg/s)
	mass flux in river at SW-005	M_r5 =	3.0727 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	3.0774 (mg/s)
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C_r1 =	0.00010 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00010 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00010 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00010 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00010 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00010 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00010 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.00010 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case	Year 12		
Parameter	Calcium		
Input concentration data	concentration of surface water into SW-001	C s1 =	17.0000 (mg/L)
	concentration of surface water into SW-002	C s2 =	17.0000 (mg/L)
	concentration of surface water into SW-003	C s3 =	17.0000 (mg/L)
	concentration of surface water into SW-004	C s4 =	17.0000 (mg/L)
	concentration of surface water into SW-004A	C s4A =	17.0000 (mg/L)
	concentration of surface water into SW-005	C s5 =	17.0000 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	17.0000 (mg/L)
	concentration of surface water into Colby Lake	C scl =	17.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	17.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	24.5000 (mg/L)
	concentration of surface water from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	14.7900 (mg/L)
	concentration of ground water into SW-002	C g2 =	14.7900 (mg/L)
	concentration of ground water into SW-003	C g3 =	14.7900 (mg/L)
	concentration of ground water into SW-004	C g4 =	14.7900 (mg/L)
	concentration of ground water into SW-004A	C g4A =	14.7900 (mg/L)
	concentration of ground water into SW-005	C g5 =	14.7900 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	14.7900 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	14.7900 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	540.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	540.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	540.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	540.0000 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	461.9797 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	9.3700 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	15.8000 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	540.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	540.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	540.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	540.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	461.9797 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	9.3700 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	14.7900 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	14.7900 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	14.7900 (mg/L)
	concentration of liner leakage from WWTF ponc	C gWTFp =	387.6558 (mg/L)
High Flow	mass flux of surface water into SW-001	M s1 =	40,494.18700 (mg/s)
	mass flux of ground water into SW-001	M g1 =	75.34026 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	693.35000 (mg/s)
	mass flux of surface water into SW-002	M s2 =	41,744.91064 (mg/s)
	mass flux of ground water into SW-002	M g2 =	128.31472 (mg/s)
	mass flux of surface water into SW-003	M s3 =	26,585.50146 (mg/s)
	mass flux of ground water into SW-003	M g3 =	44.28201 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	4.33275 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	2.06064 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00044 (mg/s)
	mass flux of surface water into SW-004	M s4 =	26,875.42057 (mg/s)
	mass flux of ground water into SW-004	M g4 =	130.23821 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	(mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	2.06064 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	3.81306 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	2.80905 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	20.27794 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00042 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00038 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00062 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	5.01400 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00563 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.01206 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.56250 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	304,525.28081 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	579.77077 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	384.27105 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.01183 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	74.83577 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	78,442.97740 (mg/s)
	mass flux of ground water into SW-005	M g5 =	950.12439 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	472.78366 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	196.72179 (mg/s)
mass flux of surface water into Colby Lake	M scl =	161,635.16700 (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	489.71169 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	187.62900 (mg/s)	
Mass balance at each node			High Flow
	mass flux in river at SW-001	M r1 =	41,262.8773 (mg/s)
	mass flux in river at SW-002	M r2 =	83,136.1026 (mg/s)
	mass flux in river at SW-003	M r3 =	109,772.2799 (mg/s)
	mass flux in river at SW-004	M r4 =	136,812.4954 (mg/s)
	mass flux in river at SW-004A	M r4A =	442,376.6657 (mg/s)
	mass flux in river at SW-005	M r5 =	521,769.7674 (mg/s)
	mass flux in river at USGS Gage	M r6 =	522,439.2729 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M cl =	684,751.7806 (mg/s)
			High Flow
	concentration in river at SW-001	C r1 =	17.08321 (mg/L)
	concentration in river at SW-002	C r2 =	17.03726 (mg/L)
	concentration in river at SW-003	C r3 =	17.02814 (mg/L)
	concentration in river at SW-004	C r4 =	17.01869 (mg/L)
	concentration in river at SW-004A	C r4A =	17.01655 (mg/L)
	concentration in river at SW-005	C r5 =	17.00939 (mg/L)
	concentration in river at USGS Gage	C r6 =	17.00842 (mg/L)
	concentration in Colby Lake (H)	C cl =	17.03203 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case		Year 12	
Parameter		Cadmium	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0001 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0001 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0001 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0001 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0001 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0001 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0001 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0001 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0001 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0001 (mg/L)
	concentration of surface water from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0001 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0001 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0001 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0001 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0001 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0001 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0001 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0001 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0002 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0002 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0149 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0001 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0002 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0002 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0149 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0001 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0001 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0001 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0001 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0010 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	0.23820 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00051 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.00283 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	0.24556 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.00087 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.15639 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00030 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.15809 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.00088 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00009 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00013 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00003 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00000 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	1.79133 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.00392 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.00013 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	0.46143 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.00642 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.00278 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.00133 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	0.95080 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.00331 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00110 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	0.2415 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.4880 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.6447 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.8039 (mg/s)
	mass flux in river at SW-004A	M_r4A =	2.5993 (mg/s)
	mass flux in river at SW-005	M_r5 =	3.0671 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	3.0712 (mg/s)
	mass flux into Colby Lake	M_cl =	4.0264 (mg/s)
	High Flow		
	concentration in river at SW-001	C_r1 =	0.00010 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00010 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00010 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00010 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00010 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00010 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00010 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.00010 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 12 Chloride		
Input concentration data	concentration of surface water into SW-001	C s1 =	8.0000 (mg/L)
	concentration of surface water into SW-002	C s2 =	8.0000 (mg/L)
	concentration of surface water into SW-003	C s3 =	8.0000 (mg/L)
	concentration of surface water into SW-004	C s4 =	8.0000 (mg/L)
	concentration of surface water into SW-004A	C s4A =	8.0000 (mg/L)
	concentration of surface water into SW-005	C s5 =	8.0000 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	8.0000 (mg/L)
	concentration of surface water into Colby Lake	C scl =	8.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	8.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	1.6000 (mg/L)
	concentration of surface water from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	6.6000 (mg/L)
	concentration of ground water into SW-002	C g2 =	6.6000 (mg/L)
	concentration of ground water into SW-003	C g3 =	6.6000 (mg/L)
	concentration of ground water into SW-004	C g4 =	6.6000 (mg/L)
	concentration of ground water into SW-004A	C g4A =	6.6000 (mg/L)
	concentration of ground water into SW-005	C g5 =	6.6000 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	6.6000 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	6.6000 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	49.6586 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	33.6017 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	32.0757 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	2.2763 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.8976 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	5.3500 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	2.3300 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	49.6586 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	33.6017 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	32.0757 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	2.2763 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.8976 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	5.3500 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	6.6000 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	6.6000 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	6.6000 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	30.1422 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	19,056.08800 (mg/s)
	mass flux of ground water into SW-001	M g1 =	33.62040 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	45.28000 (mg/s)
	mass flux of surface water into SW-002	M s2 =	19,644.66383 (mg/s)
	mass flux of ground water into SW-002	M g2 =	57.26012 (mg/s)
	mass flux of surface water into SW-003	M s3 =	12,510.82422 (mg/s)
	mass flux of ground water into SW-003	M g3 =	19.76074 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.26961 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.12240 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00003 (mg/s)
	mass flux of surface water into SW-004	M s4 =	12,647.25674 (mg/s)
	mass flux of ground water into SW-004	M g4 =	58.11847 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.12240 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.01607 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00546 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	11.57812 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00002 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	2.86285 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00251 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00538 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.04374 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	143,306.01450 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	258.72124 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	35.33771 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00109 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	11.03591 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	36,914.34230 (mg/s)
	mass flux of ground water into SW-005	M g5 =	423.99060 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	222.48643 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	87.78660 (mg/s)
mass flux of surface water into Colby Lake	M scl =	76,063.60800 (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	218.53260 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	88.29600 (mg/s)	
Mass balance at each node	mass flux in river at SW-001	M r1 =	19,134.9884 (mg/s)
	mass flux in river at SW-002	M r2 =	38,836.9123 (mg/s)
	mass flux in river at SW-003	M r3 =	51,367.8893 (mg/s)
	mass flux in river at SW-004	M r4 =	64,087.9011 (mg/s)
	mass flux in river at SW-004A	M r4A =	207,699.0116 (mg/s)
	mass flux in river at SW-005	M r5 =	245,037.3445 (mg/s)
	mass flux in river at USGS Gage	M r6 =	245,347.6175 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M cl =	321,718.0541 (mg/s)
	concentration in river at SW-001	C r1 =	7.92206 (mg/L)
	concentration in river at SW-002	C r2 =	7.95893 (mg/L)
	concentration in river at SW-003	C r3 =	7.96831 (mg/L)
	concentration in river at SW-004	C r4 =	7.97217 (mg/L)
	concentration in river at SW-004A	C r4A =	7.98939 (mg/L)
	concentration in river at SW-005	C r5 =	7.98808 (mg/L)
	concentration in river at USGS Gage	C r6 =	7.98749 (mg/L)
	concentration in Colby Lake (H)	C cl =	7.92961 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case		Year 12	
Parameter		Cobalt	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0005 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0005 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0005 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0005 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0005 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0005 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0005 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0005 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0005 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0005 (mg/L)
	concentration of surface water from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0017 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0017 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0017 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0017 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0017 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0017 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0017 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0017 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0235 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0520 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0520 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0520 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	5.5768 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0011 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.0013 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0235 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0520 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0520 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0520 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	5.5768 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0011 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0017 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0017 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0017 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.2812 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	1.19101 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00841 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.01415 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	1.22779 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.01432 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.78193 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00494 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00042 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00020 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.79045 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.01453 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00020 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00037 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.03391 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00240 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00001 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00059 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00041 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	8.95663 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.06468 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.01673 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.00616 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	2.30715 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.10600 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.01391 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.02195 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	4.75398 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.05463 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00552 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	1.2136 (mg/s)
	mass flux in river at SW-002	M_r2 =	2.4557 (mg/s)
	mass flux in river at SW-003	M_r3 =	3.2431 (mg/s)
	mass flux in river at SW-004	M_r4 =	4.0860 (mg/s)
	mass flux in river at SW-004A	M_r4A =	13.1302 (mg/s)
	mass flux in river at SW-005	M_r5 =	15.5434 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	15.5792 (mg/s)
	mass flux into Colby Lake	M_cl =	20.3933 (mg/s)
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C_r1 =	0.00050 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00050 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00050 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00051 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00051 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00051 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00051 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.00054 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 12 Copper		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0017 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0017 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0017 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0017 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0017 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0017 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0017 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0017 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0190 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0012 (mg/L)
	concentration of surface water from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0030 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0030 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0030 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0030 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0030 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0030 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0030 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0030 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0920 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0920 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0920 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0920 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	1.3431 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0214 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.0170 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0920 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0920 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_g3LOs =	0.0920 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0920 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	1.3431 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0214 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0030 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0030 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0030 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.2233 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	4.04942 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.01503 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.03509 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	4.17449 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.02559 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	2.65855 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00883 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00074 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00035 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	2.68754 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.02598 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00035 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00065 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00817 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.04640 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.01147 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00032 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	30.45253 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.11564 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.06547 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.08052 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	7.84430 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.18951 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.04728 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.03924 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	16.16352 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.09768 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.20970 (mg/s)
Mass balance at each node	mass flux in river at SW-001	M_r1 =	4.0995 (mg/s)
	mass flux in river at SW-002	M_r2 =	8.2996 (mg/s)
	mass flux in river at SW-003	M_r3 =	10.9681 (mg/s)
	mass flux in river at SW-004	M_r4 =	13.7490 (mg/s)
	mass flux in river at SW-004A	M_r4A =	44.4631 (mg/s)
	mass flux in river at SW-005	M_r5 =	52.4969 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	52.5835 (mg/s)
	mass flux into Colby Lake	M_cl =	69.0544 (mg/s)
Convert mass flux to concentration	concentration in river at SW-001	C_r1 =	0.00170 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00170 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00170 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00171 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00171 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00171 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00171 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.00179 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case		Year 12	
Parameter	Fluoride		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0700 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0700 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0700 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0700 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0700 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0700 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0700 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0700 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0700 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.1400 (mg/L)
	concentration of surface water from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.2800 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.2800 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.2800 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.2800 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.2800 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.2800 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.2800 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.2800 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0622 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0621 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0622 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0621 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0627 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.2239 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.4200 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0622 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0621 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0622 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0621 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0627 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.2239 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.2800 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.2800 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.2800 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.1917 (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M_s1 =	166.74077 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	1.42632 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	3.96200 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	171.89081 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	2.42922 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	109.46971 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.83833 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00050 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00024 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	110.66350 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	2.46563 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00024 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00044 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00038 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.48453 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.11981 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00011 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00023 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00028 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	1,253.92763 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	10.97605 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.04426 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	1.98931 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	323.00050 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	17.98748 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	1.94676 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	3.72428 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	665.55657 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	9.27108 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.77259 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	172.1291 (mg/s)
	mass flux in river at SW-002	M_r2 =	346.4491 (mg/s)
	mass flux in river at SW-003	M_r3 =	456.7579 (mg/s)
	mass flux in river at SW-004	M_r4 =	570.4930 (mg/s)
	mass flux in river at SW-004A	M_r4A =	1,837.4303 (mg/s)
	mass flux in river at SW-005	M_r5 =	2,178.4163 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	2,184.0893 (mg/s)
	mass flux into Colby Lake	M_cl =	2,859.6895 (mg/s)
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C_r1 =	0.07126 (mg/L)
	concentration in river at SW-002	C_r2 =	0.07100 (mg/L)
	concentration in river at SW-003	C_r3 =	0.07085 (mg/L)
	concentration in river at SW-004	C_r4 =	0.07097 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.07068 (mg/L)
	concentration in river at SW-005	C_r5 =	0.07102 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.07110 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.07677 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case		Year 12	
Parameter	Iron		
Input concentration data	concentration of surface water into SW-001	C_s1 =	1.6000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	1.6000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	1.6000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	1.6000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	1.6000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	1.6000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	1.6000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	1.6000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	1.6000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0300 (mg/L)
	concentration of surface water from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	2.8440 (mg/L)
	concentration of ground water into SW-002	C_g2 =	2.8440 (mg/L)
	concentration of ground water into SW-003	C_g3 =	2.8440 (mg/L)
	concentration of ground water into SW-004	C_g4 =	2.8440 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	2.8440 (mg/L)
	concentration of ground water into SW-005	C_g5 =	2.8440 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	2.8440 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	2.8440 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.8100 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.8100 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.8100 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.8100 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	235.0000 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.2255 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.1500 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.8100 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.8100 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.8100 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.8100 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	235.0000 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.2255 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	2.8440 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	2.8440 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	2.8440 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	12.0635 (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M_s1 =	3,811.21760 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	14.48734 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.84900 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	3,928.93277 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	24.67391 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	2,502.16484 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	8.51508 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00650 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00309 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	2,529.45135 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	25.04378 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00309 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00572 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	1.42891 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.48801 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00031 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.12067 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00108 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00232 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.01750 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	28,661.20290 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	111.48533 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.57641 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00002 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.71047 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	7,382.86846 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	182.70140 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	44.49729 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	37.82804 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	15,212.72160 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	94.16768 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	17,65920 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	3,826.5539 (mg/s)
	mass flux in river at SW-002	M_r2 =	7,760.1806 (mg/s)
	mass flux in river at SW-003	M_r3 =	10,290.8501 (mg/s)
	mass flux in river at SW-004	M_r4 =	12,847.4129 (mg/s)
	mass flux in river at SW-004A	M_r4A =	41,621.3860 (mg/s)
	mass flux in river at SW-005	M_r5 =	49,186.9579 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	49,269.2832 (mg/s)
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C_r1 =	1.58423 (mg/L)
	concentration in river at SW-002	C_r2 =	1.59441 (mg/L)
	concentration in river at SW-003	C_r3 =	1.59634 (mg/L)
	concentration in river at SW-004	C_r4 =	1.59814 (mg/L)
	concentration in river at SW-004A	C_r4A =	1.60102 (mg/L)
	concentration in river at SW-005	C_r5 =	1.60347 (mg/L)
	concentration in river at USGS Gage	C_r6 =	1.60400 (mg/L)
	concentration in Colby Lake (H)	C_cl =	1.62849 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 12 Hardness			
Input concentration data	concentration of surface water into SW-001	C s1 =	110.0000 (mg/L)	
	concentration of surface water into SW-002	C s2 =	110.0000 (mg/L)	
	concentration of surface water into SW-003	C s3 =	110.0000 (mg/L)	
	concentration of surface water into SW-004	C s4 =	110.0000 (mg/L)	
	concentration of surface water into SW-004A	C s4A =	110.0000 (mg/L)	
	concentration of surface water into SW-005	C s5 =	110.0000 (mg/L)	
	concentration of surface water into USGS Gage	C s6 =	110.0000 (mg/L)	
	concentration of surface water into Colby Lake	C scl =	110.0000 (mg/L)	
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	110.0000 (mg/L)	
	concentration of surface water discharges from upstream of PM-1	C sns =	110.0000 (mg/L)	
	concentration of surface water from West Pit overflow	C sms =	#N/A (mg/L)	
	concentration of ground water into SW-001	C g1 =	66.4200 (mg/L)	
	concentration of ground water into SW-002	C g2 =	66.4200 (mg/L)	
	concentration of ground water into SW-003	C g3 =	66.4200 (mg/L)	
	concentration of ground water into SW-004	C g4 =	66.4200 (mg/L)	
	concentration of ground water into SW-004A	C g4A =	66.4200 (mg/L)	
	concentration of ground water into SW-005	C g5 =	66.4200 (mg/L)	
	concentration of ground water into USGS Gage	C g6 =	66.4200 (mg/L)	
	concentration of ground water into Colby Lake	C gcl =	66.4200 (mg/L)	
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)	
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)	
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	1,729.3495 (mg/L)	
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	1,729.3495 (mg/L)	
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	1,729.3495 (mg/L)	
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	1,729.3495 (mg/L)	
	concentration of liner leakage from LOSP	C gC4LO =	4,012.1997 (mg/L)	
	concentration of seepage from Overburden (Storage)	C gOS =	43.5200 (mg/L)	
	concentration of seepage from Overburden (Cat 1)	C gO12 =	71.5000 (mg/L)	
	concentration of liner leakage from Cat 1 sumps	C gC12s =	1,729.3495 (mg/L)	
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	1,729.3495 (mg/L)	
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	1,729.3495 (mg/L)	
	concentration of liner leakage from Cat 4 sumps	C gC4s =	1,729.3495 (mg/L)	
	concentration of liner leakage from LOSP sumps	C gC4LOs =	4,012.1997 (mg/L)	
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	43.5200 (mg/L)	
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)	
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	66.4200 (mg/L)	
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	66.4200 (mg/L)	
	concentration of leakage from RTH Pond - PW3	C gRTHp =	66.4200 (mg/L)	
	concentration of liner leakage from WWTF pond	C_gWTFp =	1,352.5993 (mg/L)	
	Convert concentration to mass flux	High Flow		
		mass flux of surface water into SW-001	M s1 =	262,021.21000 (mg/s)
		mass flux of ground water into SW-001	M g1 =	338.34348 (mg/s)
		mass flux of surface discharges from upstream of PM-1	M sns =	3,113.00000 (mg/s)
mass flux of surface water into SW-002		M s2 =	270,114.12765 (mg/s)	
mass flux of ground water into SW-002		M g2 =	576.24500 (mg/s)	
mass flux of surface water into SW-003		M s3 =	172,023.83299 (mg/s)	
mass flux of ground water into SW-003		M g3 =	198.86487 (mg/s)	
mass flux of seepage from East Pit to SW-003		M gep_003 =	#N/A (mg/s)	
mass flux of liner leakage from Cat 2/3 stockpile to SW-003		M gC3_003 =	13.87562 (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-003		M gC3LO_003 =	6.59921 (mg/s)	
mass flux of liner leakage from Cat 2/3 sumps to SW-003		M gC3s_003 =	0.00139 (mg/s)	
mass flux of surface water into SW-004		M s4 =	173,899.78017 (mg/s)	
mass flux of ground water into SW-004		M g4 =	584.88314 (mg/s)	
mass flux of seepage from East Pit to SW-004		M gep_004 =	#N/A (mg/s)	
mass flux of seepage from West Pit		M gwp =	#N/A (mg/s)	
mass flux of liner leakage from Cat 2/3 stockpile to SW-004		M gC3_004 =	- (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-004		M gC3LO_004 =	6.59921 (mg/s)	
mass flux of liner leakage from Cat 4 stockpile		M gC4 =	12.21133 (mg/s)	
mass flux of liner leakage from LOSP		M gC4LO =	24.39599 (mg/s)	
mass flux of seepage from Overburden (Storage)		M gOS =	94.18314 (mg/s)	
mass flux of liner leakage from Cat 3LO sumps to SW-004		M gC3LOs_004 =	0.00133 (mg/s)	
mass flux of liner leakage from Cat 4 sumps		M gC4s =	0.00121 (mg/s)	
mass flux of liner leakage from LOSP sumps		M gC4LOs =	0.00535 (mg/s)	
mass flux of seepage from Overburden Ponds - PW1		M gOp1 =	23.28806 (mg/s)	
mass flux of leakage from Haul Road Pond - PW2		M gHRp2 =	0.02527 (mg/s)	
mass flux of leakage from Haul Road Pond - PW4		M gHRp4 =	0.05414 (mg/s)	
mass flux of leakage from RTH Pond - PW3		M gRTHp =	0.00002 (mg/s)	
mass flux of liner leakage from WWTF pond		M gWTFp =	1.96265 (mg/s)	
mass flux of surface water into SW-004A		M s4A =	##### (mg/s)	
mass flux of ground water into SW-004A		M g4A =	2,603.67646 (mg/s)	
mass flux of West Pit overflow		M sms =	#N/A (mg/s)	
mass flux of liner leakage from Cat 1 stockpile		M gC12 =	1,230.62765 (mg/s)	
mass flux of liner leakage from Cat 1 sumps		M gC12s =	0.03789 (mg/s)	
mass flux of seepage from Overburden (Cat 1)		M gO12 =	338.65554 (mg/s)	
mass flux of seepage from Overburden Pond - PW7		M gOp7 =	#N/A (mg/s)	
mass flux of surface water into SW-005		M s5 =	507,572.20689 (mg/s)	
mass flux of ground water into SW-005		M g5 =	4,266.88722 (mg/s)	
mass flux of surface water into USGS Gage		M s6 =	3,059.18838 (mg/s)	
mass flux of ground water into USGS Gage		M g6 =	883.45242 (mg/s)	
mass flux of surface water into Colby Lake		M scl =	##### (mg/s)	
mass flux of ground water into Colby Lake		M gcl =	2,199.23262 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP		M shl =	1,214.07000 (mg/s)	
Mass balance at each node	High Flow			
	mass flux in river at SW-001	M r1 =	265,472.5535 (mg/s)	
	mass flux in river at SW-002	M r2 =	536,162.9261 (mg/s)	
	mass flux in river at SW-003	M r3 =	708,406.1002 (mg/s)	
	mass flux in river at SW-004	M r4 =	883,053.4926 (mg/s)	
	mass flux in river at SW-004A	M r4A =	2,857,684.1895 (mg/s)	
	mass flux in river at SW-005	M r5 =	3,369,523.2834 (mg/s)	
	mass flux in river at USGS Gage	M r6 =	3,373,465.9242 (mg/s)	
Convert mass flux to concentration	High Flow			
	concentration in river at SW-001	C r1 =	109.90809 (mg/L)	
	concentration in river at SW-002	C r2 =	109.87702 (mg/L)	
	concentration in river at SW-003	C r3 =	109.88965 (mg/L)	
	concentration in river at SW-004	C r4 =	109.84681 (mg/L)	
	concentration in river at SW-004A	C r4A =	109.92423 (mg/L)	
	concentration in river at SW-005	C r5 =	109.84452 (mg/L)	
	concentration in river at USGS Gage	C r6 =	109.82586 (mg/L)	
	concentration in Colby Lake (H)	C cl =	108.86632 (mg/L)	

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case		Year 12	
Parameter	Potassium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	1.3000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	1.3000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	1.3000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	1.3000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	1.3000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	1.3000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	1.3000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	1.3000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	1.3000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	2.7000 (mg/L)
	concentration of surface water from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	1.7500 (mg/L)
	concentration of ground water into SW-002	C_g2 =	1.7500 (mg/L)
	concentration of ground water into SW-003	C_g3 =	1.7500 (mg/L)
	concentration of ground water into SW-004	C_g4 =	1.7500 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	1.7500 (mg/L)
	concentration of ground water into SW-005	C_g5 =	1.7500 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	1.7500 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	1.7500 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	49.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	49.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	49.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	49.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	38.0000 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	2.2600 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	4.4500 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	49.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	49.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	49.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	49.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	38.0000 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	2.2600 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	1.7500 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	1.7500 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	1.7500 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	35.4703 (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M_s1 =	3,096.61430 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	8.91450 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	76.41000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	3,192.25787 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	15.18261 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	2,033.00894 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	5.23959 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.39316 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.18698 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00004 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	2,055.17922 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	15.41020 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.18698 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.34600 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.23106 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	4.89094 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00004 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00003 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00005 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	1.20935 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00067 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00143 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.05147 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	23,287.22736 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	68.60033 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	34.86904 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00107 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	21.07716 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	5,998.58062 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	112.42175 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	36.15404 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	23.27675 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	12,360.33630 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	57.94425 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	14.34810 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	3,181.9388 (mg/s)
	mass flux in river at SW-002	M_r2 =	6,389.3793 (mg/s)
	mass flux in river at SW-003	M_r3 =	8,428.2080 (mg/s)
	mass flux in river at SW-004	M_r4 =	10,505.7195 (mg/s)
	mass flux in river at SW-004A	M_r4A =	33,917.4904 (mg/s)
	mass flux in river at SW-005	M_r5 =	40,028.4928 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	40,087.9236 (mg/s)
	mass flux into Colby Lake	M_cl =	52,520.5522 (mg/s)
	High Flow		
	concentration in river at SW-001	C_r1 =	1.31735 (mg/L)
	concentration in river at SW-002	C_r2 =	1.30939 (mg/L)
	concentration in river at SW-003	C_r3 =	1.30740 (mg/L)
	concentration in river at SW-004	C_r4 =	1.30685 (mg/L)
	concentration in river at SW-004A	C_r4A =	1.30468 (mg/L)
	concentration in river at SW-005	C_r5 =	1.30491 (mg/L)
	concentration in river at USGS Gage	C_r6 =	1.30509 (mg/L)
	concentration in Colby Lake (H)	C_cl =	1.32759 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case		Year 12	
Parameter		Magnesium	
Input concentration data	concentration of surface water into SW-001	C_s1 =	8.0000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	8.0000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	8.0000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	8.0000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	8.0000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	8.0000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	8.0000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	8.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	8.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	10.5000 (mg/L)
	concentration of surface water from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	8.0200 (mg/L)
	concentration of ground water into SW-002	C_g2 =	8.0200 (mg/L)
	concentration of ground water into SW-003	C_g3 =	8.0200 (mg/L)
	concentration of ground water into SW-004	C_g4 =	8.0200 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	8.0200 (mg/L)
	concentration of ground water into SW-005	C_g5 =	8.0200 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	8.0200 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	8.0200 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	93.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	93.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	93.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	93.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	695.0117 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	4.8800 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	9.0100 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	93.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	93.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	93.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	93.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	695.0117 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	4.8800 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	8.0200 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	8.0200 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	8.0200 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	93.7680 (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M_s1 =	19,056.08800 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	40.85388 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	297.15000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	19,644.66383 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	69.57972 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	12,510.82422 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	24.01229 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.74620 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.35489 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00007 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	12,647.25674 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	70.62275 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.35489 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.65669 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	4.22599 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	10.56098 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00007 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00007 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00093 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	2.61135 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00305 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00654 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.13606 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	143,306.01450 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	314.38550 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	66.18001 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00204 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	42.67533 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	36,914.34230 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	515.21282 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	222.48643 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	106.67402 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	76,063.60800 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	265.55022 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	88.29600 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	19,394.0919 (mg/s)
	mass flux in river at SW-002	M_r2 =	39,108.3354 (mg/s)
	mass flux in river at SW-003	M_r3 =	51,644.2731 (mg/s)
	mass flux in river at SW-004	M_r4 =	64,380.7093 (mg/s)
	mass flux in river at SW-004A	M_r4A =	208,109.9666 (mg/s)
	mass flux in river at SW-005	M_r5 =	245,539.5218 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	245,868.6822 (mg/s)
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C_r1 =	8.02933 (mg/L)
	concentration in river at SW-002	C_r2 =	8.01456 (mg/L)
	concentration in river at SW-003	C_r3 =	8.01118 (mg/L)
	concentration in river at SW-004	C_r4 =	8.00859 (mg/L)
	concentration in river at SW-004A	C_r4A =	8.00520 (mg/L)
	concentration in river at SW-005	C_r5 =	8.00445 (mg/L)
	concentration in river at USGS Gage	C_r6 =	8.00445 (mg/L)
	concentration in Colby Lake (H)	C_cl =	8.02282 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case	Year 12			
Parameter	Manganese			
Input concentration data	concentration of surface water into SW-001	C s1 =	0.1500 (mg/L)	
	concentration of surface water into SW-002	C s2 =	0.1500 (mg/L)	
	concentration of surface water into SW-003	C s3 =	0.1500 (mg/L)	
	concentration of surface water into SW-004	C s4 =	0.1500 (mg/L)	
	concentration of surface water into SW-004A	C s4A =	0.1500 (mg/L)	
	concentration of surface water into SW-005	C s5 =	0.1500 (mg/L)	
	concentration of surface water into USGS Gage	C s6 =	0.1500 (mg/L)	
	concentration of surface water into Colby Lake	C scl =	0.1500 (mg/L)	
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.1500 (mg/L)	
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0086 (mg/L)	
	concentration of surface water from West Pit overflow	C sms =	#N/A (mg/L)	
	concentration of ground water into SW-001	C g1 =	0.1240 (mg/L)	
	concentration of ground water into SW-002	C g2 =	0.1240 (mg/L)	
	concentration of ground water into SW-003	C g3 =	0.1240 (mg/L)	
	concentration of ground water into SW-004	C g4 =	0.1240 (mg/L)	
	concentration of ground water into SW-004A	C g4A =	0.1240 (mg/L)	
	concentration of ground water into SW-005	C g5 =	0.1240 (mg/L)	
	concentration of ground water into USGS Gage	C g6 =	0.1240 (mg/L)	
	concentration of ground water into Colby Lake	C gcl =	0.1240 (mg/L)	
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)	
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)	
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.3549 (mg/L)	
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.7500 (mg/L)	
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.7500 (mg/L)	
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.7500 (mg/L)	
	concentration of liner leakage from LOSP	C gC4LO =	14.2736 (mg/L)	
	concentration of seepage from Overburden (Storage)	C gOS =	0.1604 (mg/L)	
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.1160 (mg/L)	
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.3549 (mg/L)	
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.7500 (mg/L)	
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.7500 (mg/L)	
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.7500 (mg/L)	
	concentration of liner leakage from LOSP sumps	C gC4LOs =	14.2736 (mg/L)	
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.1604 (mg/L)	
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)	
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.1240 (mg/L)	
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.1240 (mg/L)	
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.1240 (mg/L)	
	concentration of liner leakage from WWTF ponc	C_gWTFp =	1.1341 (mg/L)	
	Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	357.30165 (mg/s)
		mass flux of ground water into SW-001	M g1 =	0.63166 (mg/s)
		mass flux of surface discharges from upstream of PM-1	M sns =	0.24338 (mg/s)
		mass flux of surface water into SW-002	M s2 =	368.33745 (mg/s)
		mass flux of ground water into SW-002	M g2 =	1.07580 (mg/s)
mass flux of surface water into SW-003		M s3 =	234.57795 (mg/s)	
mass flux of ground water into SW-003		M g3 =	0.37126 (mg/s)	
mass flux of seepage from East Pit to SW-003		M gep_003 =	#N/A (mg/s)	
mass flux of liner leakage from Cat 2/3 stockpile to SW-003		M gC3_003 =	0.00602 (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-003		M gC3LO_003 =	0.00286 (mg/s)	
mass flux of liner leakage from Cat 2/3 sumps to SW-003		M gC3s_003 =	0.00000 (mg/s)	
mass flux of surface water into SW-004		M s4 =	237.13606 (mg/s)	
mass flux of ground water into SW-004		M g4 =	1.09192 (mg/s)	
mass flux of seepage from East Pit to SW-004		M gep_004 =	#N/A (mg/s)	
mass flux of seepage from West Pit		M gwp =	#N/A (mg/s)	
mass flux of liner leakage from Cat 2/3 stockpile to SW-004		M gC3_004 =	- (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-004		M gC3LO_004 =	0.00286 (mg/s)	
mass flux of liner leakage from Cat 4 stockpile		M gC4 =	0.00530 (mg/s)	
mass flux of liner leakage from LOSP		M gC4LO =	0.08679 (mg/s)	
mass flux of seepage from Overburden (Storage)		M gOS =	0.34711 (mg/s)	
mass flux of liner leakage from Cat 3LO sumps to SW-004		M gC3LOs_004 =	0.00000 (mg/s)	
mass flux of liner leakage from Cat 4 sumps		M gC4s =	0.00000 (mg/s)	
mass flux of liner leakage from LOSP sumps		M gC4LOs =	0.00002 (mg/s)	
mass flux of seepage from Overburden Ponds - PW1		M gOp1 =	0.08583 (mg/s)	
mass flux of leakage from Haul Road Pond - PW2		M gHRp2 =	0.00005 (mg/s)	
mass flux of leakage from Haul Road Pond - PW4		M gHRp4 =	0.00010 (mg/s)	
mass flux of leakage from RTH Pond - PW3		M gRTHp =	0.00000 (mg/s)	
mass flux of liner leakage from WWTF pond		M gWTFp =	0.00165 (mg/s)	
mass flux of surface water into SW-004A		M s4A =	2,686.98777 (mg/s)	
mass flux of ground water into SW-004A		M g4A =	4.86082 (mg/s)	
mass flux of West Pit overflow		M sms =	#N/A (mg/s)	
mass flux of liner leakage from Cat 1 stockpile		M gC12 =	0.25256 (mg/s)	
mass flux of liner leakage from Cat 1 sumps		M gC12s =	0.00001 (mg/s)	
mass flux of seepage from Overburden (Cat 1)		M gO12 =	0.54943 (mg/s)	
mass flux of seepage from Overburden Pond - PW7		M gOp7 =	#N/A (mg/s)	
mass flux of surface water into SW-005		M s5 =	692.14392 (mg/s)	
mass flux of ground water into SW-005		M g5 =	7.96588 (mg/s)	
mass flux of surface water into USGS Gage		M s6 =	4.17162 (mg/s)	
mass flux of ground water into USGS Gage		M g6 =	1.64932 (mg/s)	
mass flux of surface water into Colby Lake		M scl =	1,426.19265 (mg/s)	
mass flux of ground water into Colby Lake		M gcl =	4.10576 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP		M shl =	1.65555 (mg/s)	
Mass balance at each node		High Flow		
		mass flux in river at SW-001	M r1 =	358.1767 (mg/s)
	mass flux in river at SW-002	M r2 =	727.5899 (mg/s)	
	mass flux in river at SW-003	M r3 =	962.5480 (mg/s)	
	mass flux in river at SW-004	M r4 =	1,201.3057 (mg/s)	
	mass flux in river at SW-004A	M r4A =	3,893.9563 (mg/s)	
	mass flux in river at SW-005	M r5 =	4,594.0661 (mg/s)	
Convert mass flux to concentration	mass flux in river at USGS Gage	M r6 =	4,599.8870 (mg/s)	
	mass flux into Colby Lake	M cl =	6,031.8410 (mg/s)	
	High Flow			
	concentration in river at SW-001	C r1 =	0.14829 (mg/L)	
	concentration in river at SW-002	C r2 =	0.14911 (mg/L)	
	concentration in river at SW-003	C r3 =	0.14931 (mg/L)	
	concentration in river at SW-004	C r4 =	0.14944 (mg/L)	
	concentration in river at SW-004A	C r4A =	0.14979 (mg/L)	
	concentration in river at SW-005	C r5 =	0.14976 (mg/L)	
	concentration in river at USGS Gage	C r6 =	0.14975 (mg/L)	
	concentration in Colby Lake (H)	C cl =	0.14858 (mg/L)	



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 12 Sodium		
Input concentration data	concentration of surface water into SW-001	C s1 =	2.5000 (mg/L)
	concentration of surface water into SW-002	C s2 =	2.5000 (mg/L)
	concentration of surface water into SW-003	C s3 =	2.5000 (mg/L)
	concentration of surface water into SW-004	C s4 =	2.5000 (mg/L)
	concentration of surface water into SW-004A	C s4A =	2.5000 (mg/L)
	concentration of surface water into SW-005	C s5 =	2.5000 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	2.5000 (mg/L)
	concentration of surface water into Colby Lake	C scl =	2.5000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	2.5000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	4.8000 (mg/L)
	concentration of surface water from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	13.3300 (mg/L)
	concentration of ground water into SW-002	C g2 =	13.3300 (mg/L)
	concentration of ground water into SW-003	C g3 =	13.3300 (mg/L)
	concentration of ground water into SW-004	C g4 =	13.3300 (mg/L)
	concentration of ground water into SW-004A	C g4A =	13.3300 (mg/L)
	concentration of ground water into SW-005	C g5 =	13.3300 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	13.3300 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	13.3300 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	242.4332 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	453.5286 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	526.5464 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	681.0000 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	87.2082 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	4.6000 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	7.1900 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	242.4332 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	453.5286 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	526.5464 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	681.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	87.2082 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	4.6000 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	13.3300 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	13.3300 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	13.3300 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	461.0094 (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M s1 =	5,955.02750 (mg/s)
	mass flux of ground water into SW-001	M g1 =	67.90302 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	135.84000 (mg/s)
	mass flux of surface water into SW-002	M s2 =	6,138.95745 (mg/s)
	mass flux of ground water into SW-002	M g2 =	115.64809 (mg/s)
	mass flux of surface water into SW-003	M s3 =	3,909.63257 (mg/s)
	mass flux of ground water into SW-003	M g3 =	39.91070 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	3.63894 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	2.00930 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00037 (mg/s)
	mass flux of surface water into SW-004	M s4 =	3,952.26773 (mg/s)
	mass flux of ground water into SW-004	M g4 =	117.38170 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	2.00930 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	4.80870 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.53027 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	9.95502 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00041 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00048 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00012 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	2.46151 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00507 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.01087 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.66894 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	44,783.12953 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	522.53850 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	172.51861 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00531 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	34.05501 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	11,535.73197 (mg/s)
	mass flux of ground water into SW-005	M g5 =	856.33253 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	69.52701 (mg/s)
mass flux of ground water into USGS Gage	M g6 =	177.30233 (mg/s)	
mass flux of surface water into Colby Lake	M scl =	23,769.87750 (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	441.36963 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	27.59250 (mg/s)	
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M r1 =	6,158.7705 (mg/s)
	mass flux in river at SW-002	M r2 =	12,413.3761 (mg/s)
	mass flux in river at SW-003	M r3 =	16,368.5679 (mg/s)
	mass flux in river at SW-004	M r4 =	20,458.6684 (mg/s)
	mass flux in river at SW-004A	M r4A =	65,970.9154 (mg/s)
	mass flux in river at SW-005	M r5 =	78,362.9799 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M r6 =	78,609.8092 (mg/s)
	mass flux into Colby Lake	M cl =	102,848.6488 (mg/s)
	High Flow		
	concentration in river at SW-001	C r1 =	2.54979 (mg/L)
	concentration in river at SW-002	C r2 =	2.54390 (mg/L)
	concentration in river at SW-003	C r3 =	2.53913 (mg/L)
	concentration in river at SW-004	C r4 =	2.54494 (mg/L)
	concentration in river at SW-004A	C r4A =	2.53765 (mg/L)
	concentration in river at SW-005	C r5 =	2.55459 (mg/L)
	concentration in river at USGS Gage	C r6 =	2.55920 (mg/L)
	concentration in Colby Lake (H)	C cl =	2.86695 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 12 Nickel		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0016 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0016 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0016 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0016 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0016 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0016 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0016 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0016 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0033 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0016 (mg/L)
	concentration of surface water from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0163 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0163 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0163 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0163 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0163 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0163 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0163 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0163 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.1531 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.8600 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.8600 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.8600 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	72.2515 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0080 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.0190 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.1531 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.8600 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.8600 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.8600 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	72.2515 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0080 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0163 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0163 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0163 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	3.7146 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	3.71594 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.08293 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.04387 (mg/s)
	mass flux of surface water into SW-002	M s2 =	3.83071 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.14124 (mg/s)
	mass flux of surface water into SW-003	M s3 =	2.43961 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.04874 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.00690 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00328 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	2.46622 (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.14336 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00328 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00607 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.43932 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.01725 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00010 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.00426 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00001 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00001 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00539 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	27.94467 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.63818 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	0.10892 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	0.08999 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	7.19830 (mg/s)
	mass flux of ground water into SW-005	M g5 =	1.04584 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	0.04338 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.21654 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	14.83240 (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	0.53905 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.03642 (mg/s)
Mass balance at each node	mass flux in river at SW-001	M r1 =	3.8427 (mg/s)
	mass flux in river at SW-002	M r2 =	7.8147 (mg/s)
	mass flux in river at SW-003	M r3 =	10.3132 (mg/s)
	mass flux in river at SW-004	M r4 =	13.3985 (mg/s)
	mass flux in river at SW-004A	M r4A =	42.1803 (mg/s)
	mass flux in river at SW-005	M r5 =	50.4244 (mg/s)
	mass flux in river at USGS Gage	M r6 =	50.6843 (mg/s)
	mass flux into Colby Lake	M cl =	66.0922 (mg/s)
Convert mass flux to concentration	concentration in river at SW-001	C r1 =	0.00159 (mg/L)
	concentration in river at SW-002	C r2 =	0.00160 (mg/L)
	concentration in river at SW-003	C r3 =	0.00160 (mg/L)
	concentration in river at SW-004	C r4 =	0.00167 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00162 (mg/L)
	concentration in river at SW-005	C r5 =	0.00164 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00165 (mg/L)
	concentration in Colby Lake (H)	C cl =	0.00211 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 12 Lead			
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0005 (mg/L)	
	concentration of surface water into SW-002	C s2 =	0.0005 (mg/L)	
	concentration of surface water into SW-003	C s3 =	0.0005 (mg/L)	
	concentration of surface water into SW-004	C s4 =	0.0005 (mg/L)	
	concentration of surface water into SW-004A	C s4A =	0.0005 (mg/L)	
	concentration of surface water into SW-005	C s5 =	0.0005 (mg/L)	
	concentration of surface water into USGS Gage	C s6 =	0.0005 (mg/L)	
	concentration of surface water into Colby Lake	C scl =	0.0005 (mg/L)	
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0005 (mg/L)	
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0002 (mg/L)	
	concentration of surface water from West Pit overflow	C sms =	#N/A (mg/L)	
	concentration of ground water into SW-001	C g1 =	0.0011 (mg/L)	
	concentration of ground water into SW-002	C g2 =	0.0011 (mg/L)	
	concentration of ground water into SW-003	C g3 =	0.0011 (mg/L)	
	concentration of ground water into SW-004	C g4 =	0.0011 (mg/L)	
	concentration of ground water into SW-004A	C g4A =	0.0011 (mg/L)	
	concentration of ground water into SW-005	C g5 =	0.0011 (mg/L)	
	concentration of ground water into USGS Gage	C g6 =	0.0011 (mg/L)	
	concentration of ground water into Colby Lake	C gcl =	0.0011 (mg/L)	
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)	
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)	
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.0183 (mg/L)	
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.0167 (mg/L)	
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0193 (mg/L)	
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0528 (mg/L)	
	concentration of liner leakage from LOSP	C gC4LO =	0.0528 (mg/L)	
	concentration of seepage from Overburden (Storage)	C gOS =	0.0007 (mg/L)	
	concentration of seepage from Overburden (Cat 1)	C gO12 =	- (mg/L)	
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.0183 (mg/L)	
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.0167 (mg/L)	
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.0193 (mg/L)	
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0528 (mg/L)	
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0528 (mg/L)	
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0007 (mg/L)	
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)	
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0011 (mg/L)	
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0011 (mg/L)	
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0011 (mg/L)	
	concentration of liner leakage from WWTF ponc	C_gWTFp =	0.0330 (mg/L)	
	Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	1.19101 (mg/s)
		mass flux of ground water into SW-001	M g1 =	0.00571 (mg/s)
		mass flux of surface discharges from upstream of PM-1	M sns =	0.00425 (mg/s)
mass flux of surface water into SW-002		M s2 =	1.22779 (mg/s)	
mass flux of ground water into SW-002		M g2 =	0.00972 (mg/s)	
mass flux of surface water into SW-003		M s3 =	0.78193 (mg/s)	
mass flux of ground water into SW-003		M g3 =	0.00335 (mg/s)	
mass flux of seepage from East Pit to SW-003		M gep_003 =	#N/A (mg/s)	
mass flux of liner leakage from Cat 2/3 stockpile to SW-003		M gC3_003 =	0.00013 (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-003		M gC3LO_003 =	0.00007 (mg/s)	
mass flux of liner leakage from Cat 2/3 sumps to SW-003		M gC3s_003 =	0.00000 (mg/s)	
mass flux of surface water into SW-004		M s4 =	0.79045 (mg/s)	
mass flux of ground water into SW-004		M g4 =	0.00986 (mg/s)	
mass flux of seepage from East Pit to SW-004		M gep_004 =	#N/A (mg/s)	
mass flux of seepage from West Pit		M gwp =	#N/A (mg/s)	
mass flux of liner leakage from Cat 2/3 stockpile to SW-004		M gC3_004 =	- (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-004		M gC3LO_004 =	0.00007 (mg/s)	
mass flux of liner leakage from Cat 4 stockpile		M gC4 =	0.00037 (mg/s)	
mass flux of liner leakage from LOSP		M gC4LO =	0.00032 (mg/s)	
mass flux of seepage from Overburden (Storage)		M gOS =	0.00146 (mg/s)	
mass flux of liner leakage from Cat 3LO sumps to SW-004		M gC3LOs_004 =	0.00000 (mg/s)	
mass flux of liner leakage from Cat 4 sumps		M gC4s =	0.00000 (mg/s)	
mass flux of liner leakage from LOSP sumps		M gC4LOs =	0.00000 (mg/s)	
mass flux of seepage from Overburden Ponds - PW1		M gOp1 =	0.00036 (mg/s)	
mass flux of leakage from Haul Road Pond - PW2		M gHRp2 =	0.00000 (mg/s)	
mass flux of leakage from Haul Road Pond - PW4		M gHRp4 =	0.00000 (mg/s)	
mass flux of leakage from RTH Pond - PW3		M gRTHp =	0.00000 (mg/s)	
mass flux of liner leakage from WWTF pond		M gWTFp =	0.00005 (mg/s)	
mass flux of surface water into SW-004A		M s4A =	8.95663 (mg/s)	
mass flux of ground water into SW-004A		M g4A =	0.04390 (mg/s)	
mass flux of West Pit overflow		M sms =	#N/A (mg/s)	
mass flux of liner leakage from Cat 1 stockpile		M gC12 =	0.01304 (mg/s)	
mass flux of liner leakage from Cat 1 sumps		M gC12s =	0.00000 (mg/s)	
mass flux of seepage from Overburden (Cat 1)		M gO12 =	- (mg/s)	
mass flux of seepage from Overburden Pond - PW7		M gOp7 =	#N/A (mg/s)	
mass flux of surface water into SW-005		M s5 =	2.30715 (mg/s)	
mass flux of ground water into SW-005		M g5 =	0.07195 (mg/s)	
mass flux of surface water into USGS Gage		M s6 =	0.01391 (mg/s)	
mass flux of ground water into USGS Gage		M g6 =	0.01490 (mg/s)	
mass flux of surface water into Colby Lake		M scl =	4.75398 (mg/s)	
mass flux of ground water into Colby Lake		M gcl =	0.03708 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP		M shl =	0.00552 (mg/s)	
Mass balance at each node	High Flow			
	mass flux in river at SW-001	M r1 =	1.2010 (mg/s)	
	mass flux in river at SW-002	M r2 =	2.4385 (mg/s)	
	mass flux in river at SW-003	M r3 =	3.2240 (mg/s)	
	mass flux in river at SW-004	M r4 =	4.0269 (mg/s)	
	mass flux in river at SW-004A	M r4A =	13.0405 (mg/s)	
	mass flux in river at SW-005	M r5 =	15.4196 (mg/s)	
Convert mass flux to concentration	mass flux in river at USGS Gage	M r6 =	15.4484 (mg/s)	
	mass flux into Colby Lake	M cl =	20.2449 (mg/s)	
	High Flow			
	concentration in river at SW-001	C r1 =	0.00050 (mg/L)	
	concentration in river at SW-002	C r2 =	0.00050 (mg/L)	
	concentration in river at SW-003	C r3 =	0.00050 (mg/L)	
	concentration in river at SW-004	C r4 =	0.00050 (mg/L)	
	concentration in river at SW-004A	C r4A =	0.00050 (mg/L)	
	concentration in river at SW-005	C r5 =	0.00050 (mg/L)	
	concentration in river at USGS Gage	C r6 =	0.00050 (mg/L)	
	concentration in Colby Lake (H)	C cl =	0.00052 (mg/L)	

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 12 Antimony		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0015 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0015 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0015 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0015 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0015 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0015 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0015 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0015 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0015 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0015 (mg/L)
	concentration of surface water from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0015 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0015 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0015 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0015 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0015 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0015 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0015 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0015 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.0800 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.0800 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0800 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0800 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.0420 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0003 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.0004 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.0800 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.0800 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.0800 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0800 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0420 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0003 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0015 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0015 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0015 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	0.0588 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	3.57302 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.00764 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.04245 (mg/s)
	mass flux of surface water into SW-002	M s2 =	3.68337 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.01301 (mg/s)
	mass flux of surface water into SW-003	M s3 =	2.34578 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.00449 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.00064 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00031 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	2.37136 (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.01321 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00031 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00056 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00026 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.00065 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.00016 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00009 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	26.86988 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.05880 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	0.05693 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	0.00189 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	6.92144 (mg/s)
	mass flux of ground water into SW-005	M g5 =	0.09636 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	0.04172 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.01995 (mg/s)
mass flux of surface water into Colby Lake	M scl =	14.26193 (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	0.04967 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.01656 (mg/s)	
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M r1 =	3.6231 (mg/s)
	mass flux in river at SW-002	M r2 =	7.3195 (mg/s)
	mass flux in river at SW-003	M r3 =	9.6707 (mg/s)
	mass flux in river at SW-004	M r4 =	12.0573 (mg/s)
	mass flux in river at SW-004A	M r4A =	39.0448 (mg/s)
	mass flux in river at SW-005	M r5 =	46.0626 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M r6 =	46.1243 (mg/s)
	mass flux into Colby Lake	M cl =	60.4524 (mg/s)
	High Flow		
	concentration in river at SW-001	C r1 =	0.00150 (mg/L)
	concentration in river at SW-002	C r2 =	0.00150 (mg/L)
	concentration in river at SW-003	C r3 =	0.00150 (mg/L)
	concentration in river at SW-004	C r4 =	0.00150 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00150 (mg/L)
	concentration in river at SW-005	C r5 =	0.00150 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00150 (mg/L)
	concentration in Colby Lake (H)	C cl =	0.00151 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 12 Selenium		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0005 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0005 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0005 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0005 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0005 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0005 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0005 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0005 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0005 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0005 (mg/L)
	concentration of surface water from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0019 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0019 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0019 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0019 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0019 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0019 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0019 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0019 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.0029 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.0029 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0029 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0029 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.0029 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0004 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.0019 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.0029 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.0029 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.0029 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0029 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0029 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0004 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0019 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0019 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0019 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0026 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	1.19101 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.00973 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.01415 (mg/s)
	mass flux of surface water into SW-002	M s2 =	1.22779 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.01657 (mg/s)
	mass flux of surface water into SW-003	M s3 =	0.78193 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.00572 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.00002 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	0.79045 (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.01682 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00002 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00002 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.00096 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.00024 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00000 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	8.95663 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.07487 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	0.00206 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	0.00900 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	2.30715 (mg/s)
	mass flux of ground water into SW-005	M g5 =	0.12270 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	0.01391 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.02540 (mg/s)
mass flux of surface water into Colby Lake	M scl =	4.75398 (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	0.06324 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.00552 (mg/s)	
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M r1 =	1.2149 (mg/s)
	mass flux in river at SW-002	M r2 =	2.4592 (mg/s)
	mass flux in river at SW-003	M r3 =	3.2469 (mg/s)
	mass flux in river at SW-004	M r4 =	4.0555 (mg/s)
	mass flux in river at SW-004A	M r4A =	13.0960 (mg/s)
	mass flux in river at SW-005	M r5 =	15.5279 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M r6 =	15.5672 (mg/s)
	mass flux into Colby Lake	M cl =	20.3899 (mg/s)
	High Flow		
	concentration in river at SW-001	C r1 =	0.00050 (mg/L)
	concentration in river at SW-002	C r2 =	0.00050 (mg/L)
	concentration in river at SW-003	C r3 =	0.00050 (mg/L)
	concentration in river at SW-004	C r4 =	0.00050 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00050 (mg/L)
	concentration in river at SW-005	C r5 =	0.00051 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00051 (mg/L)
	concentration in Colby Lake (H)	C cl =	0.00054 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 12 Sulfate		
Input concentration data	concentration of surface water into SW-001	C s1 =	9.0000 (mg/L)
	concentration of surface water into SW-002	C s2 =	9.0000 (mg/L)
	concentration of surface water into SW-003	C s3 =	9.0000 (mg/L)
	concentration of surface water into SW-004	C s4 =	9.0000 (mg/L)
	concentration of surface water into SW-004A	C s4A =	9.0000 (mg/L)
	concentration of surface water into SW-005	C s5 =	9.0000 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	9.0000 (mg/L)
	concentration of surface water into Colby Lake	C scl =	9.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	9.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	22.0000 (mg/L)
	concentration of surface water from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	16.1300 (mg/L)
	concentration of ground water into SW-002	C g2 =	16.1300 (mg/L)
	concentration of ground water into SW-003	C g3 =	16.1300 (mg/L)
	concentration of ground water into SW-004	C g4 =	16.1300 (mg/L)
	concentration of ground water into SW-004A	C g4A =	16.1300 (mg/L)
	concentration of ground water into SW-005	C g5 =	16.1300 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	16.1300 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	16.1300 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	592.8026 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	2,340.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	2,340.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	2,340.0000 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	8,920.2430 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	35.1700 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	68.3000 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	592.8026 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	2,340.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	2,340.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	2,340.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	8,920.2430 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	35.1700 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	16.1300 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	16.1300 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	16.1300 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	1,882.9951 (mg/L)
	Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =
mass flux of ground water into SW-001		M g1 =	82.16622 (mg/s)
mass flux of surface discharges from upstream of PM-1		M sns =	622.60000 (mg/s)
mass flux of surface water into SW-002		M s2 =	22,100.24681 (mg/s)
mass flux of ground water into SW-002		M g2 =	139.94026 (mg/s)
mass flux of surface water into SW-003		M s3 =	14,074.67724 (mg/s)
mass flux of ground water into SW-003		M g3 =	48.29404 (mg/s)
mass flux of seepage from East Pit to SW-003		M gep_003 =	#N/A (mg/s)
mass flux of liner leakage from Cat 2/3 stockpile to SW-003		M gC3_003 =	18.77524 (mg/s)
mass flux of liner leakage from Cat 3LO stockpile to SW-003		M gC3LO_003 =	8.92945 (mg/s)
mass flux of liner leakage from Cat 2/3 sumps to SW-003		M gC3s_003 =	0.00189 (mg/s)
mass flux of surface water into SW-004		M s4 =	14,228.16383 (mg/s)
mass flux of ground water into SW-004		M g4 =	142.03802 (mg/s)
mass flux of seepage from East Pit to SW-004		M gep_004 =	#N/A (mg/s)
mass flux of seepage from West Pit		M gwp =	#N/A (mg/s)
mass flux of liner leakage from Cat 2/3 stockpile to SW-004		M gC3_004 =	- (mg/s)
mass flux of liner leakage from Cat 3LO stockpile to SW-004		M gC3LO_004 =	8.92945 (mg/s)
mass flux of liner leakage from Cat 4 stockpile		M gC4 =	16.52327 (mg/s)
mass flux of liner leakage from LOSP		M gC4LO =	54.23912 (mg/s)
mass flux of seepage from Overburden (Storage)		M gOS =	76.11262 (mg/s)
mass flux of liner leakage from Cat 3LO sumps to SW-004		M gC3LOs_004 =	0.00180 (mg/s)
mass flux of liner leakage from Cat 4 sumps		M gC4s =	0.00164 (mg/s)
mass flux of liner leakage from LOSP sumps		M gC4LOs =	0.01188 (mg/s)
mass flux of seepage from Overburden Ponds - PW1		M gOp1 =	18.81988 (mg/s)
mass flux of leakage from Haul Road Pond - PW2		M gHRp2 =	0.00614 (mg/s)
mass flux of leakage from Haul Road Pond - PW4		M gHRp4 =	0.01315 (mg/s)
mass flux of leakage from RTH Pond - PW3		M gRTHp =	0.00000 (mg/s)
mass flux of liner leakage from WWTF pond		M gWTFp =	2.73227 (mg/s)
mass flux of surface water into SW-004A		M s4A =	161,219.26631 (mg/s)
mass flux of ground water into SW-004A		M g4A =	632.29902 (mg/s)
mass flux of West Pit overflow		M sms =	#N/A (mg/s)
mass flux of liner leakage from Cat 1 stockpile		M gC12 =	421.84606 (mg/s)
mass flux of liner leakage from Cat 1 sumps		M gC12s =	0.01299 (mg/s)
mass flux of seepage from Overburden (Cat 1)		M gO12 =	323.49893 (mg/s)
mass flux of seepage from Overburden Pond - PW7		M gOp7 =	#N/A (mg/s)
mass flux of surface water into SW-005		M s5 =	41,528.63509 (mg/s)
mass flux of ground water into SW-005		M g5 =	1,036.20733 (mg/s)
mass flux of surface water into USGS Gage		M s6 =	250.29723 (mg/s)
mass flux of ground water into USGS Gage		M g6 =	214.54513 (mg/s)
mass flux of surface water into Colby Lake		M scl =	85,571.55900 (mg/s)
mass flux of ground water into Colby Lake	M gcl =	534.08043 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	99.33300 (mg/s)	
Mass balance at each node			High Flow
	mass flux in river at SW-001	M r1 =	22,142.8652 (mg/s)
	mass flux in river at SW-002	M r2 =	44,383.0523 (mg/s)
	mass flux in river at SW-003	M r3 =	58,533.7302 (mg/s)
	mass flux in river at SW-004	M r4 =	73,081.3251 (mg/s)
	mass flux in river at SW-004A	M r4A =	235,678.2484 (mg/s)
	mass flux in river at SW-005	M r5 =	278,243.0909 (mg/s)
mass flux in river at USGS Gage	M r6 =	278,707.9332 (mg/s)	
mass flux into Colby Lake	M cl =	364,912.9056 (mg/s)	
Convert mass flux to concentration			High Flow
	concentration in river at SW-001	C r1 =	9.16735 (mg/L)
	concentration in river at SW-002	C r2 =	9.09551 (mg/L)
	concentration in river at SW-003	C r3 =	9.07989 (mg/L)
	concentration in river at SW-004	C r4 =	9.09090 (mg/L)
	concentration in river at SW-004A	C r4A =	9.06564 (mg/L)
	concentration in river at SW-005	C r5 =	9.07056 (mg/L)
	concentration in river at USGS Gage	C r6 =	9.07356 (mg/L)
	concentration in Colby Lake (H)	C cl =	9.39554 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case	Year 12		
Parameter	Thallium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0004 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0004 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0004 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0004 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0004 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0004 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0004 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0004 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0004 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0003 (mg/L)
	concentration of surface water from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0000 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0000 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0000 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0000 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0000 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0000 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0000 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0000 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0001 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0000 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0001 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0000 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0000 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0000 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0000 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0011 (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M_s1 =	0.95280 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00002 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.00809 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	0.98223 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.00003 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.62554 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00001 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.63236 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.00004 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00009 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00002 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00000 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	7.16530 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.00016 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	1.84572 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.00026 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.01112 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.00005 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	3.80318 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.00013 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00441 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	0.9609 (mg/s)
	mass flux in river at SW-002	M_r2 =	1.9432 (mg/s)
	mass flux in river at SW-003	M_r3 =	2.5687 (mg/s)
	mass flux in river at SW-004	M_r4 =	3.2012 (mg/s)
	mass flux in river at SW-004A	M_r4A =	10.3667 (mg/s)
	mass flux in river at SW-005	M_r5 =	12.2127 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	12.2239 (mg/s)
	mass flux into Colby Lake	M_cl =	16.0316 (mg/s)
	High Flow		
	concentration in river at SW-001	C_r1 =	0.00040 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00040 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00040 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00040 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00040 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00040 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00040 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.00039 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case		Year 12	
Parameter		Vanadium	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0009 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0009 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0009 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0009 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0009 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0009 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0009 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0009 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0009 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0043 (mg/L)
	concentration of surface water from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0043 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0043 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0043 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0043 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0043 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0043 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0043 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0043 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0914 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.8093 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.9396 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.2973 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0215 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0017 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.0014 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0914 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.8093 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.9396 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.2973 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0215 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0017 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0043 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0043 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0043 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	1.0181 (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M_s1 =	2.14381 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.02190 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.12169 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	2.21002 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.03731 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	1.40747 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.01287 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00649 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00359 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	1.42282 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.03787 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00359 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00210 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00013 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00374 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00093 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00148 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	16.12193 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.16856 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.06503 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.00663 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	4.15286 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.27624 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.02503 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.05719 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	8.55716 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.14238 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00993 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	2.2874 (mg/s)
	mass flux in river at SW-002	M_r2 =	4.5347 (mg/s)
	mass flux in river at SW-003	M_r3 =	5.9652 (mg/s)
	mass flux in river at SW-004	M_r4 =	7.4378 (mg/s)
	mass flux in river at SW-004A	M_r4A =	23.8000 (mg/s)
	mass flux in river at SW-005	M_r5 =	28.2291 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	28.3113 (mg/s)
	mass flux into Colby Lake	M_cl =	37.0207 (mg/s)
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C_r1 =	0.00095 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00093 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00093 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00093 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00092 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00092 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00092 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.00103 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case		Year 12	
Parameter	Zinc		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0160 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0160 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0160 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0160 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0160 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0160 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0160 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0160 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0620 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0073 (mg/L)
	concentration of surface water from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0275 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0275 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0275 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0275 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0275 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0275 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0275 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0275 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0900 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0900 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0900 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0900 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	26.0000 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0046 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.0030 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0900 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0900 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0900 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0900 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	26.0000 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0046 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0275 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0275 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0275 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	1.2883 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	38.11218 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.14009 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.20744 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	39.28933 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.23858 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	25.02165 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.08234 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00072 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00034 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	25.29451 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.24216 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00034 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00064 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.15809 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00987 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00003 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00244 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00001 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00002 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00187 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	286.61203 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	1.07801 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.06405 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.01421 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	73.82868 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	1.76663 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.44497 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.36578 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	152.12722 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.91055 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.68429 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	38.4597 (mg/s)
	mass flux in river at SW-002	M_r2 =	77.9876 (mg/s)
	mass flux in river at SW-003	M_r3 =	103.0927 (mg/s)
	mass flux in river at SW-004	M_r4 =	128.8027 (mg/s)
	mass flux in river at SW-004A	M_r4A =	416.5709 (mg/s)
	mass flux in river at SW-005	M_r5 =	492.1663 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	492.5770 (mg/s)
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C_r1 =	0.01592 (mg/L)
	concentration in river at SW-002	C_r2 =	0.01598 (mg/L)
	concentration in river at SW-003	C_r3 =	0.01599 (mg/L)
	concentration in river at SW-004	C_r4 =	0.01602 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.01602 (mg/L)
	concentration in river at SW-005	C_r5 =	0.01604 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.01605 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.01641 (mg/L)

***Appendix H.12***  
***Partridge River***  
***Reasonable Alternative***  
***Year 15***

## Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

### FLOWS

Case	Year 15		
Flows	Low Flow Conditions (no surface runoff)		
Total flow in Partridge River	flow in river at SW-001	Q_r1_L =	1.18 (cfs)
	flow in river at SW-002	Q_r2_L =	1.48 (cfs)
	flow in river at SW-003	Q_r3_L =	1.59 (cfs)
	flow in river at SW-004	Q_r4_L =	2.00 (cfs)
	flow in river at SW-004A	Q_r4a_L =	3.44 (cfs)
	flow in river at SW-005	Q_r5_L =	5.71 (cfs)
	flow in river at USGS Gage	Q_r6_L =	6.18 (cfs)
	total flow into Colby Lake	Q_cl_L =	7.74 (cfs)
	flow check	Q_ck_L =	7.74 (cfs)
Input flow data	surface water flow into SW-001	Q_s1_L =	- (cfs)
	surface water flow into SW-002	Q_s2_L =	- (cfs)
	surface water flow into SW-003	Q_s3_L =	- (cfs)
	surface water flow into SW-004	Q_s4_L =	- (cfs)
	surface water flow into SW-004A	Q_s4a_L =	- (cfs)
	surface water flow into SW-005	Q_s5_L =	- (cfs)
	surface water flow into USGS Gage	Q_s6_L =	- (cfs)
	surface water flow into Colby Lake	Q_scl_L =	- (cfs)
	surface water inflow from Hoyt Lakes WWTP	Q_shl_L =	0.39 (cfs)
	surface water inflow from discharges upstream of PM-1	Q_sns_L =	1.00 (cfs)
	surface water flow from West Pit overflow	Q_sms_L =	- (cfs)
	ground water flow into SW-001	Q_g1_L =	0.18 (cfs)
	ground water flow into SW-002	Q_g2_L =	0.30 (cfs)
	ground water flow into SW-003	Q_g3_L =	0.11 (cfs)
	ground water flow into SW-004	Q_g4_L =	0.31 (cfs)
	ground water flow into SW-004A	Q_g4a_L =	1.39 (cfs)
	ground water flow into SW-005	Q_g5_L =	2.27 (cfs)
	ground water flow into USGS Gage	Q_g6_L =	0.47 (cfs)
	ground water flow into Colby Lake	Q_gcl_L =	1.17 (cfs)
	ground water seepage from East Pit to SW-003	Q_gep_003_L =	- (cfs)
	ground water seepage from East Pit to SW-004	Q_gep_004_L =	- (cfs)
	ground water seepage from West Pit	Q_gwp_L =	- (cfs)
	ground water liner leakage from Cat 1 stockpile	Q_gC12_L =	0.0062 (cfs)
	ground water liner leakage from Cat 2/3 stockpile to SW-003	Q_gC3_003_L =	0.0000 (cfs)
	ground water liner leakage from Cat 2/3 stockpile to SW-004	Q_gC3_004_L =	- (cfs)
	ground water liner leakage from Cat 3LO stockpile to SW-003	Q_gC3LO_003_L =	0.0000 (cfs)
	ground water liner leakage from Cat 3LO stockpile to SW-004	Q_gC3LO_004_L =	0.0000 (cfs)
	ground water liner leakage from Cat 4 stockpile	Q_gC4_L =	0.0000 (cfs)
	ground water liner leakage from LO SP	Q_gC4LO_L =	0.0000 (cfs)
	ground water seepage from Overburden Storage	Q_gOS_L =	0.0765 (cfs)
	ground water seepage from Overburden (Cat 1)	Q_gO12_L =	0.0457 (cfs)
	ground water liner leakage from Cat 1 sumps	Q_gC12s_L =	0.0000 (cfs)
	ground water liner leakage from Cat 2/3 sumps	Q_gC3s_L =	0.0000 (cfs)
	ground water liner leakage from Cat 3LO sumps	Q_gC3LOs_L =	0.0000 (cfs)
	ground water liner leakage from Cat 4 sumps	Q_gC4s_L =	0.0000 (cfs)
	ground water liner leakage from LO SP sumps	Q_gC4LOs_L =	0.0000 (cfs)
	ground water seepage from Overburden pond - PW1	Q_gOp1_L =	0.0189 (cfs)
	ground water seepage from Overburden pond - PW7	Q_gOp7_L =	- (cfs)
	ground water leakage from Haul Road pond - PW2	Q_gHRp2_L =	0.0000 (cfs)
	ground water leakage from Haul Road pond - PW4	Q_gHRp4_L =	0.0000 (cfs)
	ground water leakage from RTH pond - PW3	Q_gRTHp_L =	0.0000 (cfs)
	ground water liner leakage from WWTF pond	Q_gWTFp_L =	0.0000 (cfs)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case		Year 15	
Parameter	Silver		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0001 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0001 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0001 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0001 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0001 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0001 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0001 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0001 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0001 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0001 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0006 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0006 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0006 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0006 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0006 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0006 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0006 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0006 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0007 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0007 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0007 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0007 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0007 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	- (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0007 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0007 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0007 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0007 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0007 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	- (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0006 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0006 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0006 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0007 (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00280 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.00340 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.00471 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00167 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.00488 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	- (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00000 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.02158 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.00012 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.03533 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.00732 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.01821 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00110 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	0.0062 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.0109 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.0126 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.0175 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.0362 (mg/s)
	mass flux in river at SW-005	M_r5 =	0.0745 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	0.0818 (mg/s)
	mass flux into Colby Lake	M_cl =	0.1011 (mg/s)
	Low Flow		
	concentration in river at SW-001	C_r1 =	0.00019 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00026 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00028 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00031 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00040 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00046 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00047 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.00015 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case	Year 15		
Parameter	Aluminum		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0700 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0700 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0700 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0700 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0700 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0700 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0700 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0700 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0700 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0173 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.1250 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.1250 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.1250 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.1250 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.1250 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.1250 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.1250 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.1250 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	1.6800 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	1.6800 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	1.6800 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	1.6800 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	83.0000 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.4106 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.1400 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	1.6800 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	1.6800 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	1.6800 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	1.6800 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	83.0000 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.4106 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.1250 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.1250 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.1250 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	2.5729 (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.63675 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.48959 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	1.06948 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.38019 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00158 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00013 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	1.10912 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00013 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00011 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.01092 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.88859 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00011 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.21972 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00005 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00010 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00314 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	4.90461 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.29442 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00004 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.18099 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	8.03013 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	1.66263 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	4.13888 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.77259 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	1.1263 (mg/s)
	mass flux in river at SW-002	M_r2 =	2.1958 (mg/s)
	mass flux in river at SW-003	M_r3 =	2.5777 (mg/s)
	mass flux in river at SW-004	M_r4 =	4.8097 (mg/s)
	mass flux in river at SW-004A	M_r4A =	10.1898 (mg/s)
	mass flux in river at SW-005	M_r5 =	18.2199 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	19.8825 (mg/s)
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C_r1 =	0.03373 (mg/L)
	concentration in river at SW-002	C_r2 =	0.05234 (mg/L)
	concentration in river at SW-003	C_r3 =	0.05729 (mg/L)
	concentration in river at SW-004	C_r4 =	0.08503 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.10476 (mg/L)
	concentration in river at SW-005	C_r5 =	0.11281 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.11374 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.07632 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case		Year 15	
Parameter		Arsenic	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0021 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0021 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0021 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0021 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0021 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0021 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0021 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0021 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0021 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0065 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0022 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0022 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0022 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0022 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0022 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0022 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0022 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0022 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.4854 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.7100 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.2389 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.7100 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.2514 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0016 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.0027 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.4854 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.7100 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.2389 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.7100 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.2514 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0016 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0022 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0022 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0022 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.4269 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.01100 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.18395 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.01848 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00657 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00067 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00002 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.01917 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00002 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00005 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00003 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00338 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00083 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00052 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.08475 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.08506 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.00349 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.13876 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.02873 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.07152 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.02329 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	0.1950 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.2134 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.2207 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.2447 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.4180 (mg/s)
	mass flux in river at SW-005	M_r5 =	0.5568 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	0.5855 (mg/s)
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C_r1 =	0.00584 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00509 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00491 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00433 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00430 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00345 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00335 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.00226 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case		Year 15	
Parameter		Boron	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0450 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0450 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0450 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0450 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0450 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0450 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0450 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0450 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0450 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0960 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0870 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0870 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0870 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0870 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0870 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0870 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0870 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0870 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.7600 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.7600 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.7600 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.7600 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.7600 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0622 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.0370 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.7600 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.7600 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.7600 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.7600 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.7600 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0622 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0870 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0870 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0870 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.5396 (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.44318 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	2.71680 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.74436 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.26461 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00071 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00006 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.77195 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00006 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00005 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00010 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.13461 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.03328 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00003 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00007 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00066 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	3.41361 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.13319 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00002 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.04783 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	5.58897 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	1.15719 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	2.88066 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.49667 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	3.1800 (mg/s)
	mass flux in river at SW-002	M_r2 =	3.9043 (mg/s)
	mass flux in river at SW-003	M_r3 =	4.1697 (mg/s)
	mass flux in river at SW-004	M_r4 =	5.1105 (mg/s)
	mass flux in river at SW-004A	M_r4A =	8.7052 (mg/s)
	mass flux in river at SW-005	M_r5 =	14.2942 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	15.4513 (mg/s)
	mass flux into Colby Lake	M_cl =	18.8267 (mg/s)
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C_r1 =	0.09463 (mg/L)
	concentration in river at SW-002	C_r2 =	0.09307 (mg/L)
	concentration in river at SW-003	C_r3 =	0.09268 (mg/L)
	concentration in river at SW-004	C_r4 =	0.09034 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.08949 (mg/L)
	concentration in river at SW-005	C_r5 =	0.08850 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.08839 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.05098 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case		Year 15	
Parameter	Barium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0077 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0077 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0077 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0077 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0077 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0077 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0077 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0077 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0077 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0050 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0219 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0219 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0219 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0219 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0219 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0219 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0219 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0219 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.1900 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.1900 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.1900 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.1900 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.1900 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0168 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.0140 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.1900 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.1900 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.1900 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.1900 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.1900 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0168 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0219 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0219 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0219 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.1387 (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.11166 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.14150 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.18754 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.06667 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00018 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.19450 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00001 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00002 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.03643 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00901 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00001 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00002 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00017 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.86007 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.03330 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.01810 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	1.40816 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.29156 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.72579 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.08476 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	0.2532 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.4407 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.5076 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.7477 (mg/s)
	mass flux in river at SW-004A	M_r4A =	1.6592 (mg/s)
	mass flux in river at SW-005	M_r5 =	3.0674 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	3.3589 (mg/s)
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C_r1 =	0.00758 (mg/L)
	concentration in river at SW-002	C_r2 =	0.01051 (mg/L)
	concentration in river at SW-003	C_r3 =	0.01128 (mg/L)
	concentration in river at SW-004	C_r4 =	0.01322 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.01706 (mg/L)
	concentration in river at SW-005	C_r5 =	0.01899 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.01921 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.00934 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 15 Beryllium		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0001 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0001 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0001 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0001 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0001 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0001 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0001 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0001 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0001 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0001 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0001 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0001 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0001 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0001 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0001 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0001 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0001 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0001 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0002 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0002 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.0023 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	- (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.0002 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0002 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0023 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	- (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0001 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0001 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0001 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0003 (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M s1 =	- (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.00074 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.00283 (mg/s)
	mass flux of surface water into SW-002	M s2 =	- (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.00124 (mg/s)
	mass flux of surface water into SW-003	M s3 =	- (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.00044 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	- (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.00129 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	- (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00000 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.00569 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	0.00004 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	- (mg/s)
	mass flux of ground water into SW-005	M g5 =	0.00931 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	- (mg/s)
mass flux of ground water into USGS Gage	M g6 =	0.00193 (mg/s)	
mass flux of surface water into Colby Lake	M scl =	- (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	0.00480 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.00110 (mg/s)	
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M r1 =	0.0036 (mg/s)
	mass flux in river at SW-002	M r2 =	0.0048 (mg/s)
	mass flux in river at SW-003	M r3 =	0.0053 (mg/s)
	mass flux in river at SW-004	M r4 =	0.0065 (mg/s)
	mass flux in river at SW-004A	M r4A =	0.0123 (mg/s)
	mass flux in river at SW-005	M r5 =	0.0216 (mg/s)
	mass flux in river at USGS Gage	M r6 =	0.0235 (mg/s)
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C r1 =	0.00011 (mg/L)
	concentration in river at SW-002	C r2 =	0.00011 (mg/L)
	concentration in river at SW-003	C r3 =	0.00012 (mg/L)
	concentration in river at SW-004	C r4 =	0.00012 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00013 (mg/L)
	concentration in river at SW-005	C r5 =	0.00013 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00013 (mg/L)
	concentration in Colby Lake (H)	C cl =	0.00010 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 15 Calcium		
Input concentration data	concentration of surface water into SW-001	C s1 =	17.0000 (mg/L)
	concentration of surface water into SW-002	C s2 =	17.0000 (mg/L)
	concentration of surface water into SW-003	C s3 =	17.0000 (mg/L)
	concentration of surface water into SW-004	C s4 =	17.0000 (mg/L)
	concentration of surface water into SW-004A	C s4A =	17.0000 (mg/L)
	concentration of surface water into SW-005	C s5 =	17.0000 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	17.0000 (mg/L)
	concentration of surface water into Colby Lake	C scl =	17.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	17.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	24.5000 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	14.7900 (mg/L)
	concentration of ground water into SW-002	C g2 =	14.7900 (mg/L)
	concentration of ground water into SW-003	C g3 =	14.7900 (mg/L)
	concentration of ground water into SW-004	C g4 =	14.7900 (mg/L)
	concentration of ground water into SW-004A	C g4A =	14.7900 (mg/L)
	concentration of ground water into SW-005	C g5 =	14.7900 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	14.7900 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	14.7900 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	540.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	540.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	540.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	540.0000 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	480.0000 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	9.3700 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	15.8000 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	540.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	540.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	540.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	540.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	480.0000 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	9.3700 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	14.7900 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	14.7900 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	14.7900 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	371.6773 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	(mg/s)
	mass flux of ground water into SW-001	M g1 =	75.34026 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	693.35000 (mg/s)
	mass flux of surface water into SW-002	M s2 =	(mg/s)
	mass flux of ground water into SW-002	M g2 =	126.54143 (mg/s)
	mass flux of surface water into SW-003	M s3 =	(mg/s)
	mass flux of ground water into SW-003	M g3 =	44.98349 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep 003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3 003 =	0.50675 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO 003 =	0.04224 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s 003 =	0.00044 (mg/s)
	mass flux of surface water into SW-004	M s4 =	(mg/s)
	mass flux of ground water into SW-004	M g4 =	131.23090 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep 004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3 004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO 004 =	0.04224 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.03590 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.06315 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	20.27794 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs 004 =	0.00042 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00038 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00064 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	5.01400 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00563 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.01206 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.45359 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M g4A =	580.31365 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	94.63370 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.01183 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	20.42604 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	- (mg/s)
	mass flux of ground water into SW-005	M g5 =	950.12439 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	196.72179 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	489.71169 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl =	187.62900 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M r1 =	768.6903 (mg/s)
	mass flux in river at SW-002	M r2 =	895.2317 (mg/s)
	mass flux in river at SW-003	M r3 =	940.7646 (mg/s)
	mass flux in river at SW-004	M r4 =	1,097.9019 (mg/s)
	mass flux in river at SW-004A	M r4A =	1,793.2871 (mg/s)
	mass flux in river at SW-005	M r5 =	2,743.4115 (mg/s)
	mass flux in river at USGS Gage	M r6 =	2,940.1333 (mg/s)
mass flux into Colby Lake	M cl =	3,617.4740 (mg/s)	
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C r1 =	23.01881 (mg/L)
	concentration in river at SW-002	C r2 =	21.34051 (mg/L)
	concentration in river at SW-003	C r3 =	20.90942 (mg/L)
	concentration in river at SW-004	C r4 =	19.40878 (mg/L)
	concentration in river at SW-004A	C r4A =	18.43576 (mg/L)
	concentration in river at SW-005	C r5 =	16.98568 (mg/L)
	concentration in river at USGS Gage	C r6 =	16.81862 (mg/L)
	concentration in Colby Lake (H)	C cl =	16.92994 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case		Year 15	
Parameter		Cadmium	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0001 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0001 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0001 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0001 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0001 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0001 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0001 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0001 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0001 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0001 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0001 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0001 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0001 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0001 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0001 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0001 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0001 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0001 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0002 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0002 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0149 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0001 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0002 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0002 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0149 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0001 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0001 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0001 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0001 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0005 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00051 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.00283 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.00086 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00030 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.00089 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00013 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00003 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00000 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.00392 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.00003 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.00642 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.00133 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.00331 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00110 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	0.0033 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.0042 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.0045 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.0056 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.0095 (mg/s)
	mass flux in river at SW-005	M_r5 =	0.0159 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	0.0173 (mg/s)
	mass flux into Colby Lake	M_cl =	0.0217 (mg/s)
	Low Flow		
	concentration in river at SW-001	C_r1 =	0.00010 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00010 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00010 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00010 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00010 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00010 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00010 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.00010 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 15 Chloride		
Input concentration data	concentration of surface water into SW-001	C s1 =	8.0000 (mg/L)
	concentration of surface water into SW-002	C s2 =	8.0000 (mg/L)
	concentration of surface water into SW-003	C s3 =	8.0000 (mg/L)
	concentration of surface water into SW-004	C s4 =	8.0000 (mg/L)
	concentration of surface water into SW-004A	C s4A =	8.0000 (mg/L)
	concentration of surface water into SW-005	C s5 =	8.0000 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	8.0000 (mg/L)
	concentration of surface water into Colby Lake	C scl =	8.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	8.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	1.6000 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	6.6000 (mg/L)
	concentration of ground water into SW-002	C g2 =	6.6000 (mg/L)
	concentration of ground water into SW-003	C g3 =	6.6000 (mg/L)
	concentration of ground water into SW-004	C g4 =	6.6000 (mg/L)
	concentration of ground water into SW-004A	C g4A =	6.6000 (mg/L)
	concentration of ground water into SW-005	C g5 =	6.6000 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	6.6000 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	6.6000 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	83.4329 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	- (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	71.2406 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.5874 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.4329 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	5.3500 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	2.3300 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	83.4329 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	- (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	71.2406 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.5874 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.4329 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	5.3500 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	6.6000 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	6.6000 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	6.6000 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	16.9465 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	- (mg/s)
	mass flux of ground water into SW-001	M g1 =	33.62040 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	45.28000 (mg/s)
	mass flux of surface water into SW-002	M s2 =	- (mg/s)
	mass flux of ground water into SW-002	M g2 =	56.46879 (mg/s)
	mass flux of surface water into SW-003	M s3 =	- (mg/s)
	mass flux of ground water into SW-003	M g3 =	20.07377 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep 003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3 003 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO 003 =	0.00557 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s 003 =	- (mg/s)
	mass flux of surface water into SW-004	M s4 =	- (mg/s)
	mass flux of ground water into SW-004	M g4 =	58.56146 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep 004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3 004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO 004 =	0.00557 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00004 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00006 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	11.57812 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs 004 =	0.00005 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	2.86285 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00251 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00538 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.02068 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M g4A =	258.96350 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	14.62142 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00183 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	3.01219 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	- (mg/s)
	mass flux of ground water into SW-005	M g5 =	423.99060 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	87.78660 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	218.53260 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl =	88.29600 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M r1 =	78.9004 (mg/s)
	mass flux in river at SW-002	M r2 =	135.3692 (mg/s)
	mass flux in river at SW-003	M r3 =	155.4485 (mg/s)
	mass flux in river at SW-004	M r4 =	228.4853 (mg/s)
	mass flux in river at SW-004A	M r4A =	505.0842 (mg/s)
	mass flux in river at SW-005	M r5 =	929.0748 (mg/s)
	mass flux in river at USGS Gage	M r6 =	1,016.8614 (mg/s)
mass flux into Colby Lake	M cl =	1,323.6900 (mg/s)	
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C r1 =	2.36271 (mg/L)
	concentration in river at SW-002	C r2 =	3.22693 (mg/L)
	concentration in river at SW-003	C r3 =	3.45500 (mg/L)
	concentration in river at SW-004	C r4 =	4.03918 (mg/L)
	concentration in river at SW-004A	C r4A =	5.19248 (mg/L)
	concentration in river at SW-005	C r5 =	5.75231 (mg/L)
	concentration in river at USGS Gage	C r6 =	5.81681 (mg/L)
concentration in Colby Lake (H	C cl =	7.71401 (mg/L)	

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case		Year 15	
Parameter		Cobalt	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0005 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0005 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0005 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0005 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0005 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0005 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0005 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0005 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0005 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0005 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0017 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0017 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0017 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0017 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0017 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0017 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0017 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0017 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0520 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0520 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0362 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0520 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	13.8740 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0011 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.0013 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0520 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0520 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0362 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0520 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	13.8740 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0011 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0017 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0017 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0017 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.2761 (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00841 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.01415 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.01412 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00502 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00005 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.01464 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00183 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00240 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00002 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00059 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00034 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.06474 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.00911 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.00168 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.10600 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.02195 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.05463 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00552 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	0.0226 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.0367 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.0417 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.0616 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.1371 (mg/s)
	mass flux in river at SW-005	M_r5 =	0.2431 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	0.2650 (mg/s)
	mass flux into Colby Lake	M_cl =	0.3252 (mg/s)
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C_r1 =	0.00068 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00087 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00093 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00109 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00141 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00151 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00152 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.00064 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 15 Copper		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0017 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0017 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0017 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0017 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0017 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0017 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0017 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0017 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0190 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0012 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0030 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0030 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0030 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0030 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0030 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0030 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0030 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0030 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0920 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0920 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0920 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0920 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	3.3413 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0214 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.0170 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0920 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0920 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0920 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0920 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	3.3413 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0214 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0030 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0030 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0030 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.2407 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.01503 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.03509 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.02524 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00897 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00009 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.02618 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00001 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00044 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.04840 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.01147 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00029 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.11575 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.01612 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.02198 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.18951 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.03924 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.09768 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.20970 (mg/s)
Mass balance at each node	mass flux in river at SW-001	M_r1 =	0.0501 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.0754 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.0844 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.1692 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.3231 (mg/s)
	mass flux in river at SW-005	M_r5 =	0.5126 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	0.5518 (mg/s)
	mass flux into Colby Lake	M_cl =	0.8592 (mg/s)
Convert mass flux to concentration	concentration in river at SW-001	C_r1 =	0.00150 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00180 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00188 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00299 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00332 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00317 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00316 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.00203 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case		Year 15	
Parameter		Fluoride	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0700 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0700 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0700 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0700 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0700 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0700 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0700 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0700 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0700 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.1400 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.2800 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.2800 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.2800 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.2800 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.2800 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.2800 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.2800 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.2800 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0621 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0621 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0621 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0621 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0622 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.2239 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.4200 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0621 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0621 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0621 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0621 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0622 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.2239 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.2800 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.2800 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.2800 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.1258 (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	1.42632 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	3.96200 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	2.39565 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.85161 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00006 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	2.48443 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.48453 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.11981 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00011 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00023 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00015 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	10.98633 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.01088 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.54297 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	17.98748 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	3.72428 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	9.27108 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.77259 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	5.3883 (mg/s)
	mass flux in river at SW-002	M_r2 =	7.7840 (mg/s)
	mass flux in river at SW-003	M_r3 =	8.6356 (mg/s)
	mass flux in river at SW-004	M_r4 =	11.7249 (mg/s)
	mass flux in river at SW-004A	M_r4A =	23.2651 (mg/s)
	mass flux in river at SW-005	M_r5 =	41.2526 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	44.9769 (mg/s)
	mass flux into Colby Lake	M_cl =	55.0205 (mg/s)
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C_r1 =	0.16136 (mg/L)
	concentration in river at SW-002	C_r2 =	0.18555 (mg/L)
	concentration in river at SW-003	C_r3 =	0.19194 (mg/L)
	concentration in river at SW-004	C_r4 =	0.20727 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.23918 (mg/L)
	concentration in river at SW-005	C_r5 =	0.25541 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.25728 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.09650 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case		Year 15	
Parameter		Iron	
Input concentration data	concentration of surface water into SW-001	C_s1 =	1.6000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	1.6000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	1.6000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	1.6000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	1.6000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	1.6000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	1.6000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	1.6000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	1.6000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0300 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	2.8440 (mg/L)
	concentration of ground water into SW-002	C_g2 =	2.8440 (mg/L)
	concentration of ground water into SW-003	C_g3 =	2.8440 (mg/L)
	concentration of ground water into SW-004	C_g4 =	2.8440 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	2.8440 (mg/L)
	concentration of ground water into SW-005	C_g5 =	2.8440 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	2.8440 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	2.8440 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.8100 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.8100 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.8100 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.8100 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	235.0000 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.2255 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.1500 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.8100 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.8100 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.8100 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.8100 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	235.0000 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.2255 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	2.8440 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	2.8440 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	2.8440 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	4.4681 (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	14.48734 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.84900 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	24.33292 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	8.64997 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00076 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00006 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	25.23466 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00006 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00005 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.03092 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.48801 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00031 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.12067 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00108 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00232 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00545 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	111.58972 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.14195 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00002 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.19392 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	182.70140 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	37.82804 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	94.16768 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	17.65920 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	15.3363 (mg/s)
	mass flux in river at SW-002	M_r2 =	39.6693 (mg/s)
	mass flux in river at SW-003	M_r3 =	48.3200 (mg/s)
	mass flux in river at SW-004	M_r4 =	74.2036 (mg/s)
	mass flux in river at SW-004A	M_r4A =	186.1292 (mg/s)
	mass flux in river at SW-005	M_r5 =	368.8306 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	406.6587 (mg/s)
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C_r1 =	0.45925 (mg/L)
	concentration in river at SW-002	C_r2 =	0.94563 (mg/L)
	concentration in river at SW-003	C_r3 =	1.07396 (mg/L)
	concentration in river at SW-004	C_r4 =	1.31178 (mg/L)
	concentration in river at SW-004A	C_r4A =	1.91349 (mg/L)
	concentration in river at SW-005	C_r5 =	2.28359 (mg/L)
	concentration in river at USGS Gage	C_r6 =	2.32623 (mg/L)
	concentration in Colby Lake (H)	C_cl =	1.71184 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case		Year 15	
Parameter		Hardness	
Input concentration data	concentration of surface water into SW-001	C_s1 =	110.0000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	110.0000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	110.0000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	110.0000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	110.0000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	110.0000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	110.0000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	110.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	110.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	110.0000 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	66.4200 (mg/L)
	concentration of ground water into SW-002	C_g2 =	66.4200 (mg/L)
	concentration of ground water into SW-003	C_g3 =	66.4200 (mg/L)
	concentration of ground water into SW-004	C_g4 =	66.4200 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	66.4200 (mg/L)
	concentration of ground water into SW-005	C_g5 =	66.4200 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	66.4200 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	66.4200 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	1,729.3495 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	1,729.3495 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	1,729.3495 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	1,729.3495 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	5,435.6906 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	43.5200 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	71.5000 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	1,729.3495 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	1,729.3495 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	1,729.3495 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	1,729.3495 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	5,435.6906 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	43.5200 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	66.4200 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	66.4200 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	66.4200 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	1,259.8488 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	338.34348 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	3,113.00000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	568.28140 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	202.01510 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	1.62288 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.13526 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00139 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	589.34119 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.13526 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.11497 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.71515 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	94.18314 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00133 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00121 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00724 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	23.28806 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.02527 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.05414 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00002 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	1.53752 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	2,606.11445 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	303.06434 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.03789 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	92.43429 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	4,266.88722 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	883.45242 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	2,199.23262 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	1,214.07000 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	3,451.3435 (mg/s)
	mass flux in river at SW-002	M_r2 =	4,019.6249 (mg/s)
	mass flux in river at SW-003	M_r3 =	4,223.3995 (mg/s)
	mass flux in river at SW-004	M_r4 =	4,932.8054 (mg/s)
	mass flux in river at SW-004A	M_r4A =	7,934.4564 (mg/s)
	mass flux in river at SW-005	M_r5 =	12,201.3436 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	13,084.7960 (mg/s)
	mass flux into Colby Lake	M_cl =	16,498.0967 (mg/s)
	Low Flow		
	concentration in river at SW-001	C_r1 =	103.35220 (mg/L)
	concentration in river at SW-002	C_r2 =	95.81970 (mg/L)
	concentration in river at SW-003	C_r3 =	93.86923 (mg/L)
	concentration in river at SW-004	C_r4 =	87.20247 (mg/L)
	concentration in river at SW-004A	C_r4A =	81.56961 (mg/L)
	concentration in river at SW-005	C_r5 =	75.54393 (mg/L)
	concentration in river at USGS Gage	C_r6 =	74.84973 (mg/L)
	concentration in Colby Lake (H)	C_cl =	104.93861 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 15 Potassium		
Input concentration data	concentration of surface water into SW-001	C s1 =	1.3000 (mg/L)
	concentration of surface water into SW-002	C s2 =	1.3000 (mg/L)
	concentration of surface water into SW-003	C s3 =	1.3000 (mg/L)
	concentration of surface water into SW-004	C s4 =	1.3000 (mg/L)
	concentration of surface water into SW-004A	C s4A =	1.3000 (mg/L)
	concentration of surface water into SW-005	C s5 =	1.3000 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	1.3000 (mg/L)
	concentration of surface water into Colby Lake	C scl =	1.3000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	1.3000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	2.7000 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	1.7500 (mg/L)
	concentration of ground water into SW-002	C g2 =	1.7500 (mg/L)
	concentration of ground water into SW-003	C g3 =	1.7500 (mg/L)
	concentration of ground water into SW-004	C g4 =	1.7500 (mg/L)
	concentration of ground water into SW-004A	C g4A =	1.7500 (mg/L)
	concentration of ground water into SW-005	C g5 =	1.7500 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	1.7500 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	1.7500 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	49.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	49.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	49.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	49.0000 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	38.0000 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	2.2600 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	4.4500 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	49.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	49.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	49.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	49.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	38.0000 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	2.2600 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	1.7500 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	1.7500 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	1.7500 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	34.0332 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	(mg/s)
	mass flux of ground water into SW-001	M g1 =	8.91450 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	76.41000 (mg/s)
	mass flux of surface water into SW-002	M s2 =	(mg/s)
	mass flux of ground water into SW-002	M g2 =	14.97279 (mg/s)
	mass flux of surface water into SW-003	M s3 =	(mg/s)
	mass flux of ground water into SW-003	M g3 =	5.32259 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep 003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3 003 =	0.04598 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO 003 =	0.00383 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s 003 =	0.00004 (mg/s)
	mass flux of surface water into SW-004	M s4 =	(mg/s)
	mass flux of ground water into SW-004	M g4 =	15.52766 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep 004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3 004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO 004 =	0.00383 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00326 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00500 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	4.89094 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs 004 =	0.00004 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00003 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00005 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	1.20935 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00067 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00143 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.04153 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M g4A =	68.66456 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	8.58713 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00107 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	5.75290 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	- (mg/s)
	mass flux of ground water into SW-005	M g5 =	112.42175 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	23.27675 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	57.94425 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl =	14.34810 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M r1 =	85.3245 (mg/s)
	mass flux in river at SW-002	M r2 =	100.2973 (mg/s)
	mass flux in river at SW-003	M r3 =	105.6697 (mg/s)
	mass flux in river at SW-004	M r4 =	127.3536 (mg/s)
	mass flux in river at SW-004A	M r4A =	210.3592 (mg/s)
	mass flux in river at SW-005	M r5 =	322.7810 (mg/s)
	mass flux in river at USGS Gage	M r6 =	346.0577 (mg/s)
mass flux into Colby Lake	M cl =	418.3501 (mg/s)	
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C r1 =	2.55508 (mg/L)
	concentration in river at SW-002	C r2 =	2.39088 (mg/L)
	concentration in river at SW-003	C r3 =	2.34861 (mg/L)
	concentration in river at SW-004	C r4 =	2.25137 (mg/L)
	concentration in river at SW-004A	C r4A =	2.16258 (mg/L)
	concentration in river at SW-005	C r5 =	1.99848 (mg/L)
	concentration in river at USGS Gage	C r6 =	1.97957 (mg/L)
concentration in Colby Lake (H	C cl =	1.38953 (mg/L)	

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case		Year 15	
Parameter		Magnesium	
Input concentration data	concentration of surface water into SW-001	C_s1 =	8.0000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	8.0000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	8.0000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	8.0000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	8.0000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	8.0000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	8.0000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	8.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	8.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	10.5000 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	8.0200 (mg/L)
	concentration of ground water into SW-002	C_g2 =	8.0200 (mg/L)
	concentration of ground water into SW-003	C_g3 =	8.0200 (mg/L)
	concentration of ground water into SW-004	C_g4 =	8.0200 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	8.0200 (mg/L)
	concentration of ground water into SW-005	C_g5 =	8.0200 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	8.0200 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	8.0200 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	93.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	93.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	93.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	93.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	1,030.0000 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	4.8800 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	9.0100 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	93.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	93.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	93.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	93.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	1,030.0000 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	4.8800 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	8.0200 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	8.0200 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	8.0200 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	80.9124 (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	40.85388 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	297.15000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	68.61814 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	24.39267 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.08727 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00727 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00007 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	71.16104 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00727 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00618 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.13551 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	10.56098 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00007 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00007 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00137 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	2.61135 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00305 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00654 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.09875 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	314.67988 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	16.29803 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00204 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	11.64801 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	515.21282 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	106.67402 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	265.55022 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	88.29600 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	338.0039 (mg/s)
	mass flux in river at SW-002	M_r2 =	406.6220 (mg/s)
	mass flux in river at SW-003	M_r3 =	431.1063 (mg/s)
	mass flux in river at SW-004	M_r4 =	515.7016 (mg/s)
	mass flux in river at SW-004A	M_r4A =	858.3295 (mg/s)
	mass flux in river at SW-005	M_r5 =	1,373.5423 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	1,460.2164 (mg/s)
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C_r1 =	10.12169 (mg/L)
	concentration in river at SW-002	C_r2 =	9.69304 (mg/L)
	concentration in river at SW-003	C_r3 =	9.58183 (mg/L)
	concentration in river at SW-004	C_r4 =	9.11661 (mg/L)
	concentration in river at SW-004A	C_r4A =	8.82399 (mg/L)
	concentration in river at SW-005	C_r5 =	8.50421 (mg/L)
	concentration in river at USGS Gage	C_r6 =	8.46737 (mg/L)
	concentration in Colby Lake (H)	C_cl =	8.05502 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case		Year 15	
Parameter	Manganese		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.1500 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.1500 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.1500 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.1500 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.1500 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.1500 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.1500 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.1500 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.1500 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0086 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.1240 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.1240 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.1240 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.1240 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.1240 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.1240 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.1240 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.1240 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.7500 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.7500 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.5463 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.7500 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	35.5100 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.1604 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.1160 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.7500 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.7500 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.5463 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.7500 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	35.5100 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.1604 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.1240 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.1240 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.1240 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	1.1119 (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.63166 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.24338 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	1.06093 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.37714 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00070 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00004 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	1.10025 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00004 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00005 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00467 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.34711 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00005 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.08583 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00005 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00010 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00136 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	4.86537 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.13144 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00002 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.14996 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	7.96588 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	1.64932 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	4.10576 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	1.65555 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	0.8750 (mg/s)
	mass flux in river at SW-002	M_r2 =	1.9360 (mg/s)
	mass flux in river at SW-003	M_r3 =	2.3139 (mg/s)
	mass flux in river at SW-004	M_r4 =	3.3534 (mg/s)
	mass flux in river at SW-004A	M_r4A =	9.0001 (mg/s)
	mass flux in river at SW-005	M_r5 =	16.9660 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	18.6154 (mg/s)
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C_r1 =	0.02620 (mg/L)
	concentration in river at SW-002	C_r2 =	0.04615 (mg/L)
	concentration in river at SW-003	C_r3 =	0.05143 (mg/L)
	concentration in river at SW-004	C_r4 =	0.06812 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.09253 (mg/L)
	concentration in river at SW-005	C_r5 =	0.10504 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.10649 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.14435 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 15 Sodium		
Input concentration data	concentration of surface water into SW-001	C s1 =	2.5000 (mg/L)
	concentration of surface water into SW-002	C s2 =	2.5000 (mg/L)
	concentration of surface water into SW-003	C s3 =	2.5000 (mg/L)
	concentration of surface water into SW-004	C s4 =	2.5000 (mg/L)
	concentration of surface water into SW-004A	C s4A =	2.5000 (mg/L)
	concentration of surface water into SW-005	C s5 =	2.5000 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	2.5000 (mg/L)
	concentration of surface water into Colby Lake	C scl =	2.5000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	2.5000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	4.8000 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	13.3300 (mg/L)
	concentration of ground water into SW-002	C g2 =	13.3300 (mg/L)
	concentration of ground water into SW-003	C g3 =	13.3300 (mg/L)
	concentration of ground water into SW-004	C g4 =	13.3300 (mg/L)
	concentration of ground water into SW-004A	C g4A =	13.3300 (mg/L)
	concentration of ground water into SW-005	C g5 =	13.3300 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	13.3300 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	13.3300 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	681.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	681.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	373.1487 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	681.0000 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	216.9569 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	4.6000 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	7.1900 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	681.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	681.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	373.1487 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	681.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	216.9569 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	4.6000 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	13.3300 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	13.3300 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	13.3300 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	448.5417 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	(mg/s)
	mass flux of ground water into SW-001	M g1 =	67.90302 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	135.84000 (mg/s)
	mass flux of surface water into SW-002	M s2 =	(mg/s)
	mass flux of ground water into SW-002	M g2 =	114.04985 (mg/s)
	mass flux of surface water into SW-003	M s3 =	(mg/s)
	mass flux of ground water into SW-003	M g3 =	40.54293 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep 003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3 003 =	0.63907 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO 003 =	0.02919 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s 003 =	0.00055 (mg/s)
	mass flux of surface water into SW-004	M s4 =	(mg/s)
	mass flux of ground water into SW-004	M g4 =	118.27639 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep 004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3 004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO 004 =	0.02919 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.04527 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.02854 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	9.95502 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs 004 =	0.00029 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00048 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00029 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	2.46151 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00507 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.01087 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.54740 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M g4A =	523.02779 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	119.34362 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.01492 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	9.29514 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	- (mg/s)
	mass flux of ground water into SW-005	M g5 =	856.33253 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	177.30233 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	441.36963 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl =	27.59250 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M r1 =	203.7430 (mg/s)
	mass flux in river at SW-002	M r2 =	317.7929 (mg/s)
	mass flux in river at SW-003	M r3 =	359.0046 (mg/s)
	mass flux in river at SW-004	M r4 =	490.3655 (mg/s)
	mass flux in river at SW-004A	M r4A =	1,142.0469 (mg/s)
	mass flux in river at SW-005	M r5 =	1,998.3795 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M r6 =	2,175.6818 (mg/s)
	mass flux into Colby Lake	M cl =	2,644.6439 (mg/s)
	Low Flow		
	concentration in river at SW-001	C r1 =	6.10119 (mg/L)
	concentration in river at SW-002	C r2 =	7.57554 (mg/L)
	concentration in river at SW-003	C r3 =	7.97923 (mg/L)
	concentration in river at SW-004	C r4 =	8.66871 (mg/L)
	concentration in river at SW-004A	C r4A =	11.74073 (mg/L)
	concentration in river at SW-005	C r5 =	12.37285 (mg/L)
	concentration in river at USGS Gage	C r6 =	12.44568 (mg/L)
	concentration in Colby Lake (H)	C cl =	3.89812 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case	Year 15			
Parameter	Nickel			
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0016 (mg/L)	
	concentration of surface water into SW-002	C s2 =	0.0016 (mg/L)	
	concentration of surface water into SW-003	C s3 =	0.0016 (mg/L)	
	concentration of surface water into SW-004	C s4 =	0.0016 (mg/L)	
	concentration of surface water into SW-004A	C s4A =	0.0016 (mg/L)	
	concentration of surface water into SW-005	C s5 =	0.0016 (mg/L)	
	concentration of surface water into USGS Gage	C s6 =	0.0016 (mg/L)	
	concentration of surface water into Colby Lake	C scl =	0.0016 (mg/L)	
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0033 (mg/L)	
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0016 (mg/L)	
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)	
	concentration of ground water into SW-001	C g1 =	0.0163 (mg/L)	
	concentration of ground water into SW-002	C g2 =	0.0163 (mg/L)	
	concentration of ground water into SW-003	C g3 =	0.0163 (mg/L)	
	concentration of ground water into SW-004	C g4 =	0.0163 (mg/L)	
	concentration of ground water into SW-004A	C g4A =	0.0163 (mg/L)	
	concentration of ground water into SW-005	C g5 =	0.0163 (mg/L)	
	concentration of ground water into USGS Gage	C g6 =	0.0163 (mg/L)	
	concentration of ground water into Colby Lake	C gcl =	0.0163 (mg/L)	
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)	
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)	
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.4787 (mg/L)	
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.8600 (mg/L)	
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.2356 (mg/L)	
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.8600 (mg/L)	
	concentration of liner leakage from LOSP	C gC4LO =	179.7477 (mg/L)	
	concentration of seepage from Overburden (Storage)	C gOS =	0.0080 (mg/L)	
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.0190 (mg/L)	
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.4787 (mg/L)	
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.8600 (mg/L)	
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.2356 (mg/L)	
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.8600 (mg/L)	
	concentration of liner leakage from LOSP sumps	C gC4LOs =	179.7477 (mg/L)	
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0080 (mg/L)	
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)	
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0163 (mg/L)	
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0163 (mg/L)	
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0163 (mg/L)	
	concentration of liner leakage from WWTF pond	C_gWTFp =	3.6296 (mg/L)	
	Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	(mg/s)
		mass flux of ground water into SW-001	M g1 =	0.08293 (mg/s)
		mass flux of surface discharges from upstream of PM-1	M sns =	0.04387 (mg/s)
mass flux of surface water into SW-002		M s2 =	(mg/s)	
mass flux of ground water into SW-002		M g2 =	0.13929 (mg/s)	
mass flux of surface water into SW-003		M s3 =	(mg/s)	
mass flux of ground water into SW-003		M g3 =	0.04952 (mg/s)	
mass flux of seepage from East Pit to SW-003		M gep_003 =	#N/A (mg/s)	
mass flux of liner leakage from Cat 2/3 stockpile to SW-003		M gC3_003 =	0.00081 (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-003		M gC3LO_003 =	0.00002 (mg/s)	
mass flux of liner leakage from Cat 2/3 sumps to SW-003		M gC3s_003 =	0.00000 (mg/s)	
mass flux of surface water into SW-004		M s4 =	(mg/s)	
mass flux of ground water into SW-004		M g4 =	0.14445 (mg/s)	
mass flux of seepage from East Pit to SW-004		M gep_004 =	#N/A (mg/s)	
mass flux of seepage from West Pit		M gwp =	#N/A (mg/s)	
mass flux of liner leakage from Cat 2/3 stockpile to SW-004		M gC3_004 =	- (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-004		M gC3LO_004 =	0.00002 (mg/s)	
mass flux of liner leakage from Cat 4 stockpile		M gC4 =	0.00006 (mg/s)	
mass flux of liner leakage from LOSP		M gC4LO =	0.02365 (mg/s)	
mass flux of seepage from Overburden (Storage)		M gOS =	0.01725 (mg/s)	
mass flux of liner leakage from Cat 3LO sumps to SW-004		M gC3LOs_004 =	0.00000 (mg/s)	
mass flux of liner leakage from Cat 4 sumps		M gC4s =	0.00000 (mg/s)	
mass flux of liner leakage from LOSP sumps		M gC4LOs =	0.00024 (mg/s)	
mass flux of seepage from Overburden Ponds - PW1		M gOp1 =	0.00426 (mg/s)	
mass flux of leakage from Haul Road Pond - PW2		M gHRp2 =	0.00001 (mg/s)	
mass flux of leakage from Haul Road Pond - PW4		M gHRp4 =	0.00001 (mg/s)	
mass flux of leakage from RTH Pond - PW3		M gRTHp =	0.00000 (mg/s)	
mass flux of liner leakage from WWTF pond		M gWTFp =	0.00443 (mg/s)	
mass flux of surface water into SW-004A		M s4A =	- (mg/s)	
mass flux of ground water into SW-004A		M g4A =	0.63878 (mg/s)	
mass flux of West Pit overflow		M sms =	#N/A (mg/s)	
mass flux of liner leakage from Cat 1 stockpile		M gC12 =	0.08390 (mg/s)	
mass flux of liner leakage from Cat 1 sumps		M gC12s =	0.00001 (mg/s)	
mass flux of seepage from Overburden (Cat 1)		M gO12 =	0.02456 (mg/s)	
mass flux of seepage from Overburden Pond - PW7		M gOp7 =	#N/A (mg/s)	
mass flux of surface water into SW-005		M s5 =	- (mg/s)	
mass flux of ground water into SW-005		M g5 =	1.04584 (mg/s)	
mass flux of surface water into USGS Gage		M s6 =	- (mg/s)	
mass flux of ground water into USGS Gage		M g6 =	0.21654 (mg/s)	
mass flux of surface water into Colby Lake		M scl =	- (mg/s)	
mass flux of ground water into Colby Lake		M gcl =	0.53905 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP		M shl =	0.03642 (mg/s)	
Mass balance at each node	Low Flow			
	mass flux in river at SW-001	M r1 =	0.1268 (mg/s)	
	mass flux in river at SW-002	M r2 =	0.2661 (mg/s)	
	mass flux in river at SW-003	M r3 =	0.3164 (mg/s)	
	mass flux in river at SW-004	M r4 =	0.5108 (mg/s)	
	mass flux in river at SW-004A	M r4A =	1.2581 (mg/s)	
	mass flux in river at SW-005	M r5 =	2.3039 (mg/s)	
	mass flux in river at USGS Gage	M r6 =	2.5204 (mg/s)	
mass flux into Colby Lake	M cl =	3.0959 (mg/s)		
Convert mass flux to concentration	Low Flow			
	concentration in river at SW-001	C r1 =	0.00380 (mg/L)	
	concentration in river at SW-002	C r2 =	0.00634 (mg/L)	
	concentration in river at SW-003	C r3 =	0.00703 (mg/L)	
	concentration in river at SW-004	C r4 =	0.00903 (mg/L)	
	concentration in river at SW-004A	C r4A =	0.01293 (mg/L)	
	concentration in river at SW-005	C r5 =	0.01426 (mg/L)	
	concentration in river at USGS Gage	C r6 =	0.01442 (mg/L)	
concentration in Colby Lake (H)	C cl =	0.00340 (mg/L)		



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 15 Lead		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0005 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0005 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0005 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0005 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0005 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0005 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0005 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0005 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0005 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0002 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0011 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0011 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0011 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0011 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0011 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0011 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0011 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0011 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.0528 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.0414 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0282 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0528 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.0528 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0007 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.0528 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.0414 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.0282 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0528 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0528 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0007 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0011 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0011 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0011 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0304 (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M s1 =	- (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.00571 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.00425 (mg/s)
	mass flux of surface water into SW-002	M s2 =	- (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.00958 (mg/s)
	mass flux of surface water into SW-003	M s3 =	- (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.00341 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.00004 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	- (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.00994 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.00146 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.00036 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00004 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.04395 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	0.00925 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	- (mg/s)
	mass flux of ground water into SW-005	M g5 =	0.07195 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	- (mg/s)
mass flux of ground water into USGS Gage	M g6 =	0.01490 (mg/s)	
mass flux of surface water into Colby Lake	M scl =	- (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	0.03708 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.00552 (mg/s)	
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M r1 =	0.0100 (mg/s)
	mass flux in river at SW-002	M r2 =	0.0195 (mg/s)
	mass flux in river at SW-003	M r3 =	0.0230 (mg/s)
	mass flux in river at SW-004	M r4 =	0.0348 (mg/s)
	mass flux in river at SW-004A	M r4A =	0.0880 (mg/s)
	mass flux in river at SW-005	M r5 =	0.1599 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M r6 =	0.1748 (mg/s)
	mass flux into Colby Lake	M cl =	0.2174 (mg/s)
	Low Flow		
	concentration in river at SW-001	C r1 =	0.00030 (mg/L)
	concentration in river at SW-002	C r2 =	0.00047 (mg/L)
	concentration in river at SW-003	C r3 =	0.00051 (mg/L)
	concentration in river at SW-004	C r4 =	0.00061 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00090 (mg/L)
	concentration in river at SW-005	C r5 =	0.00099 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00100 (mg/L)
	concentration in Colby Lake (H)	C cl =	0.00057 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case		Year 15	
Parameter	Antimony		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0015 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0015 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0015 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0015 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0015 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0015 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0015 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0015 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0015 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0015 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0015 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0015 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0015 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0015 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0015 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0015 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0015 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0015 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0800 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0800 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0800 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0800 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0800 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0003 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.0004 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0800 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0800 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0800 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0800 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0800 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0003 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0015 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0015 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0015 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0588 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00764 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.04245 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.01283 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00456 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00008 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.01331 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00001 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00065 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00016 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00007 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.05886 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.01402 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.00052 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.09636 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.01995 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.04967 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.01656 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	0.0501 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.0629 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.0676 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.0818 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.1552 (mg/s)
	mass flux in river at SW-005	M_r5 =	0.2515 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	0.2715 (mg/s)
	mass flux into Colby Lake	M_cl =	0.3377 (mg/s)
	Low Flow		
	concentration in river at SW-001	C_r1 =	0.00150 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00150 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00150 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00145 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00160 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00156 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00155 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.00151 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case		Year 15	
Parameter		Selenium	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0005 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0005 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0005 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0005 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0005 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0005 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0005 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0005 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0005 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0005 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0019 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0019 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0019 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0019 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0019 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0019 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0019 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0019 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0029 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0029 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0029 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0029 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0029 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0004 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.0019 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0029 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0029 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0029 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0029 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0029 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0004 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0019 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0019 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0019 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0026 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00973 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.01415 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.01634 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00581 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.01695 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00096 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00024 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00000 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.07494 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.00051 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.00246 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.12270 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.02540 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.06324 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00552 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	0.0239 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.0402 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.0460 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.0642 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.1421 (mg/s)
	mass flux in river at SW-005	M_r5 =	0.2648 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	0.2902 (mg/s)
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C_r1 =	0.00072 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00096 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00102 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00113 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00146 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00164 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00166 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.00067 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 15 Sulfate		
Input concentration data	concentration of surface water into SW-001	C s1 =	9.0000 (mg/L)
	concentration of surface water into SW-002	C s2 =	9.0000 (mg/L)
	concentration of surface water into SW-003	C s3 =	9.0000 (mg/L)
	concentration of surface water into SW-004	C s4 =	9.0000 (mg/L)
	concentration of surface water into SW-004A	C s4A =	9.0000 (mg/L)
	concentration of surface water into SW-005	C s5 =	9.0000 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	9.0000 (mg/L)
	concentration of surface water into Colby Lake	C scl =	9.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	9.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	22.0000 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	16.1300 (mg/L)
	concentration of ground water into SW-002	C g2 =	16.1300 (mg/L)
	concentration of ground water into SW-003	C g3 =	16.1300 (mg/L)
	concentration of ground water into SW-004	C g4 =	16.1300 (mg/L)
	concentration of ground water into SW-004A	C g4A =	16.1300 (mg/L)
	concentration of ground water into SW-005	C g5 =	16.1300 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	16.1300 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	16.1300 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	1,854.0847 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	2,340.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	912.4309 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	2,340.0000 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	9,600.0000 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	35.1700 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	68.3000 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	1,854.0847 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	2,340.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	912.4309 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	2,340.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	9,600.0000 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	35.1700 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	16.1300 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	16.1300 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	16.1300 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	1,604.0588 (mg/L)
Low Flow			
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	(mg/s)
	mass flux of ground water into SW-001	M g1 =	82.16622 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	622.60000 (mg/s)
	mass flux of surface water into SW-002	M s2 =	(mg/s)
	mass flux of ground water into SW-002	M g2 =	138.00631 (mg/s)
	mass flux of surface water into SW-003	M s3 =	(mg/s)
	mass flux of ground water into SW-003	M g3 =	49.05907 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep 003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3 003 =	2.19593 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO 003 =	0.07136 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s 003 =	0.00189 (mg/s)
	mass flux of surface water into SW-004	M s4 =	(mg/s)
	mass flux of ground water into SW-004	M g4 =	143.12065 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep 004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3 004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO 004 =	0.07136 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.15556 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	1.26303 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	76.11262 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs 004 =	0.00070 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00164 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.01279 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	18.81988 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00614 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.01315 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	1.95759 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M g4A =	632.89109 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	324.92389 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.04063 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	88.29738 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	- (mg/s)
	mass flux of ground water into SW-005	M g5 =	1,036.20733 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	214.54513 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	534.08043 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl =	99.33300 (mg/s)
Low Flow			
Mass balance at each node	mass flux in river at SW-001	M r1 =	704.7662 (mg/s)
	mass flux in river at SW-002	M r2 =	842.7725 (mg/s)
	mass flux in river at SW-003	M r3 =	894.1008 (mg/s)
	mass flux in river at SW-004	M r4 =	1,135.6378 (mg/s)
	mass flux in river at SW-004A	M r4A =	2,181.7908 (mg/s)
	mass flux in river at SW-005	M r5 =	3,217.9981 (mg/s)
	mass flux in river at USGS Gage	M r6 =	3,432.5432 (mg/s)
	mass flux into Colby Lake	M cl =	4,065.9567 (mg/s)
Low Flow			
Convert mass flux to concentration	concentration in river at SW-001	C r1 =	21.10458 (mg/L)
	concentration in river at SW-002	C r2 =	20.08999 (mg/L)
	concentration in river at SW-003	C r3 =	19.87227 (mg/L)
	concentration in river at SW-004	C r4 =	20.07588 (mg/L)
	concentration in river at SW-004A	C r4A =	22.42974 (mg/L)
	concentration in river at SW-005	C r5 =	19.92405 (mg/L)
	concentration in river at USGS Gage	C r6 =	19.63538 (mg/L)
	concentration in Colby Lake (H	C cl =	10.40451 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case	Year 15		
Parameter	Thallium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0004 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0004 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0004 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0004 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0004 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0004 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0004 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0004 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0004 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0003 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0000 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0000 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0000 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0000 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0000 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0000 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0000 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0000 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0001 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0000 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0001 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0000 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0000 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0000 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0000 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	0.0004 (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00002 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.00809 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.00003 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00001 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.00004 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00009 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00002 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00000 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.00016 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.00026 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.00005 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.00013 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00441 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	0.0081 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.0081 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.0082 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.0083 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.0085 (mg/s)
	mass flux in river at SW-005	M_r5 =	0.0087 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	0.0088 (mg/s)
	mass flux into Colby Lake	M_cl =	0.0133 (mg/s)
	Low Flow		
	concentration in river at SW-001	C_r1 =	0.00024 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00019 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00018 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00015 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00009 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00005 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00005 (mg/L)
	concentration in Colby Lake (H	C_cl =	0.00035 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case		Year 15	
Parameter		Vanadium	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0009 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0009 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0009 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0009 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0009 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0009 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0009 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0009 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0009 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0043 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0043 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0043 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0043 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0043 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0043 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0043 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0043 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0043 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.2858 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	2.0133 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.1407 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.7395 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0535 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0017 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.0014 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.2858 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	2.0133 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.1407 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.7395 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0535 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0017 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0043 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0043 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0043 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.9654 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.02190 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.12169 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.03679 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.01308 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00189 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.03815 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00005 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00374 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00093 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00118 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.16872 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.05009 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.00181 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.27624 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.05719 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.14238 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00993 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	0.1436 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.1804 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.1954 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.2394 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.4601 (mg/s)
	mass flux in river at SW-005	M_r5 =	0.7363 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	0.7935 (mg/s)
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C_r1 =	0.00430 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00430 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00434 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00423 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00473 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00456 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00454 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.00140 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case		Year 15	
Parameter	Zinc		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0160 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0160 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0160 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0160 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0160 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0160 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0160 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0160 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0620 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0073 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0275 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0275 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0275 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0275 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0275 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0275 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0275 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0275 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0900 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0900 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0900 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0900 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	26.0000 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0046 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.0030 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0900 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0900 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0900 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0900 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	26.0000 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0046 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0275 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0275 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0275 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.6716 (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.14009 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.20744 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.23529 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.08364 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00008 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.24401 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00001 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00342 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00987 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00003 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00244 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00001 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00002 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00082 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	1.07901 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.01577 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.00388 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	1.76663 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.36578 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.91055 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.68429 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	0.3475 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.5828 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.6665 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.9272 (mg/s)
	mass flux in river at SW-004A	M_r4A =	2.0258 (mg/s)
	mass flux in river at SW-005	M_r5 =	3.7925 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	4.1583 (mg/s)
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C_r1 =	0.01041 (mg/L)
	concentration in river at SW-002	C_r2 =	0.01389 (mg/L)
	concentration in river at SW-003	C_r3 =	0.01481 (mg/L)
	concentration in river at SW-004	C_r4 =	0.01639 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.02083 (mg/L)
	concentration in river at SW-005	C_r5 =	0.02348 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.02379 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.01750 (mg/L)

## Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1 - Mine Site - Reason

### FLOWS

Case	Year 15		
Flow	Average Flow Conditions (mean annual)		
Total flow in Partridge River	flow in river at SW-001	Q_r1_M =	5.70 (cfs)
	flow in river at SW-002	Q_r2_M =	11.27 (cfs)
	flow in river at SW-003	Q_r3_M =	12.92 (cfs)
	flow in river at SW-004	Q_r4_M =	19.03 (cfs)
	flow in river at SW-004A	Q_r4a_M =	43.64 (cfs)
	flow in river at SW-005	Q_r5_M =	82.03 (cfs)
	flow in river at USGS Gage	Q_r6_M =	86.38 (cfs)
	total flow into Colby Lake	Q_cl_M =	111.50 (cfs)
	flow check	Q_ck_M =	111.50 (cfs)
input flow data	surface water flow into SW-001	Q_s1_M =	4.52 (cfs)
	surface water flow into SW-002	Q_s2_M =	5.27 (cfs)
	surface water flow into SW-003	Q_s3_M =	1.54 (cfs)
	surface water flow into SW-004	Q_s4_M =	5.69 (cfs)
	surface water flow into SW-004A	Q_s4a_M =	23.16 (cfs)
	surface water flow into SW-005	Q_s5_M =	36.12 (cfs)
	surface water flow into USGS Gage	Q_s6_M =	3.88 (cfs)
	surface water flow into Colby Lake	Q_scl_M =	23.56 (cfs)
	surface water inflow from Hoyt Lakes WWTP	Q_shl_M =	0.39 (cfs)
	surface water inflow from discharges upstream of PM-1	Q_sns_M =	1.00 (cfs)
	surface water flow from West Pit overflow	Q_sms_M =	- (cfs)
	ground water flow into SW-001	Q_g1_M =	0.18 (cfs)
	ground water flow into SW-002	Q_g2_M =	0.30 (cfs)
	ground water flow into SW-003	Q_g3_M =	0.11 (cfs)
	ground water flow into SW-004	Q_g4_M =	0.31 (cfs)
	ground water flow into SW-004A	Q_g4a_M =	1.39 (cfs)
	ground water flow into SW-005	Q_g5_M =	2.27 (cfs)
	ground water flow into USGS Gage	Q_g6_M =	0.47 (cfs)
	ground water flow into Colby Lake	Q_gcl_M =	1.17 (cfs)
	ground water seepage from East Pit to SW-003	Q_gep_003_M =	- (cfs)
	ground water seepage from East Pit to SW-004	Q_gep_004_M =	- (cfs)
	ground water seepage from West Pit	Q_gwp_M =	- (cfs)
	ground water liner leakage from Cat 1 stockpile	Q_gC12_M =	0.0085 (cfs)
	ground water liner leakage from Cat 2/3 stockpile to SW-003	Q_gC3_003_M =	0.0001 (cfs)
	ground water liner leakage from Cat 2/3 stockpile to SW-004	Q_gC3_004_M =	- (cfs)
	ground water liner leakage from Cat 3LO stockpile to SW-003	Q_gC3LO_003_M =	0.0000 (cfs)
	ground water liner leakage from Cat 3LO stockpile to SW-004	Q_gC3LO_004_M =	0.0000 (cfs)
	ground water liner leakage from Cat 4 stockpile	Q_gC4_M =	0.0000 (cfs)
	ground water liner leakage from LOSP	Q_gC4LO_M =	0.0000 (cfs)
	ground water seepage from Overburden Storage	Q_gOS_M =	0.0765 (cfs)
	ground water seepage from Overburden (Cat 1)	Q_gO12_M =	0.0628 (cfs)
	ground water liner leakage from Cat 1 sumps	Q_gC12s_M =	0.0000 (cfs)
	ground water liner leakage from Cat 2/3 sumps	Q_gC3s_M =	0.0000 (cfs)
	ground water liner leakage from Cat 3LO sumps	Q_gC3LOs_M =	0.0000 (cfs)
	ground water liner leakage from Cat 4 sumps	Q_gC4s_M =	0.0000 (cfs)
	ground water liner leakage from LOSP sumps	Q_gC4LOs_M =	0.0000 (cfs)
	ground water seepage from Overburden pond - PW1	Q_gOp1_M =	0.0189 (cfs)
	ground water seepage from Overburden pond - PW7	Q_gOp7_M =	- (cfs)
	ground water leakage from Haul Road pond - PW2	Q_gHRp2_M =	0.0000 (cfs)
	ground water leakage from Haul Road pond - PW4	Q_gHRp4_M =	0.0000 (cfs)
	ground water leakage from RTH pond - PW3	Q_gRTHp_M =	0.0000 (cfs)
	ground water liner leakage from WWTF pond	Q_gWTFp_M =	0.000043 (cfs)

**Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1 - Mine Site - Reasonable Alternative 1**

Case		Year 15	
Parameter		Silver	
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0001 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0001 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0001 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0001 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0001 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0001 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0001 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0001 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shi =	0.0001 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0001 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0006 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0006 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0006 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0006 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0006 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0006 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0006 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0006 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.0007 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.0007 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0007 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0007 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.0007 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	- (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.0007 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.0007 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.0007 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0007 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0007 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	- (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0006 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0006 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0006 (mg/L)
	concentration of liner leakage from WWTF pond	C gWTFp =	0.0007 (mg/L)
Convert concentration to mass flux	Average Flow		
	mass flux of surface water into SW-001	M s1 =	0.01279 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.00280 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.00340 (mg/s)
	mass flux of surface water into SW-002	M s2 =	0.01492 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.00471 (mg/s)
	mass flux of surface water into SW-003	M s3 =	0.00437 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.00167 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep 003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3 003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO 003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s 003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	0.01611 (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.00488 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep 004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3 004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO 004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	- (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs 004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00000 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	0.06554 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.02158 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	0.00017 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	0.10221 (mg/s)
	mass flux of ground water into SW-005	M g5 =	0.03533 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	0.01098 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.00732 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	0.06667 (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	0.01821 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shi =	0.00110 (mg/s)
Mass balance at each node	Average Flow		
	mass flux in river at SW-001	M r1 =	0.0190 (mg/s)
	mass flux in river at SW-002	M r2 =	0.0386 (mg/s)
	mass flux in river at SW-003	M r3 =	0.0447 (mg/s)
	mass flux in river at SW-004	M r4 =	0.0656 (mg/s)
	mass flux in river at SW-004A	M r4A =	0.1529 (mg/s)
	mass flux in river at SW-005	M r5 =	0.2305 (mg/s)
	mass flux in river at USGS Gage	M r6 =	0.3088 (mg/s)
Convert mass flux to concentration	Average Flow		
	concentration in river at SW-001	C r1 =	0.00012 (mg/L)
	concentration in river at SW-002	C r2 =	0.00012 (mg/L)
	concentration in river at SW-003	C r3 =	0.00012 (mg/L)
	concentration in river at SW-004	C r4 =	0.00012 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00012 (mg/L)
	concentration in river at SW-005	C r5 =	0.00013 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00013 (mg/L)
	concentration in Colby Lake	C cl =	0.00013 (mg/L)

**Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1 - Mine Site - Reasonable Alternative 1**

Case		Year 15	
Parameter		Aluminum	
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0700 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0700 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0700 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0700 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0700 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0700 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0700 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0700 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shi =	0.0700 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0173 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.1250 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.1250 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.1250 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.1250 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.1250 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.1250 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.1250 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.1250 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	1.6800 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	1.6800 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	1.6800 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	1.6800 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	83.0000 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.4106 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.1400 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	1.6800 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	1.6800 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	1.6800 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	1.6800 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	83.0000 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.4106 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.1250 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.1250 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.1250 (mg/L)
	concentration of liner leakage from WWTF pond	C gWTFp =	2.5729 (mg/L)
Convert concentration to mass flux	Average Flow		
	mass flux of surface water into SW-001	M s1 =	8.95493 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.63675 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.48959 (mg/s)
	mass flux of surface water into SW-002	M s2 =	10.44258 (mg/s)
	mass flux of ground water into SW-002	M g2 =	1.06948 (mg/s)
	mass flux of surface water into SW-003	M s3 =	3.05726 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.38019 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep 003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3 003 =	0.00259 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO 003 =	0.00022 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s 003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	11.27421 (mg/s)
	mass flux of ground water into SW-004	M g4 =	1.10912 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep 004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3 004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO 004 =	0.00022 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00018 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.01786 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.88859 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs 004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00011 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.21972 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00005 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00010 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00314 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	45.87562 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	4.90461 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	0.40448 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00004 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	0.24865 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	71.54997 (mg/s)
	mass flux of ground water into SW-005	M g5 =	8.03013 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	7.88597 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	1.66263 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	46.67236 (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	4.13888 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shi =	0.77259 (mg/s)
Mass balance at each node	Average Flow		
	mass flux in river at SW-001	M r1 =	10.0813 (mg/s)
	mass flux in river at SW-002	M r2 =	21.5933 (mg/s)
	mass flux in river at SW-003	M r3 =	25.0336 (mg/s)
	mass flux in river at SW-004	M r4 =	38.5469 (mg/s)
	mass flux in river at SW-004A	M r4A =	89.9803 (mg/s)
	mass flux in river at SW-005	M r5 =	169.5604 (mg/s)
	mass flux in river at USGS Gage	M r6 =	178.9090 (mg/s)
Convert mass flux to concentration	Average Flow		
	concentration in river at SW-001	C r1 =	0.06249 (mg/L)
	concentration in river at SW-002	C r2 =	0.06768 (mg/L)
	concentration in river at SW-003	C r3 =	0.06844 (mg/L)
	concentration in river at SW-004	C r4 =	0.07159 (mg/L)
	concentration in river at SW-004A	C r4A =	0.07286 (mg/L)
	concentration in river at SW-005	C r5 =	0.07304 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.07319 (mg/L)
	concentration in Colby Lake	C cl =	0.07305 (mg/L)

**Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1 - Mine Site - Reasonable Alternative 1**

Case		Year 15	
Parameter		Arsenic	
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0021 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0021 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0021 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0021 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0021 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0021 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0021 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0021 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shi =	0.0021 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0065 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0022 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0022 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0022 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0022 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0022 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0022 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0022 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0022 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.2237 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.7100 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.1351 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.7100 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.1452 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0016 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.0027 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.2237 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.7100 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.1351 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.7100 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.1452 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0016 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0022 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0022 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0022 (mg/L)
	concentration of liner leakage from WWTF pond	C gWTFp =	0.4269 (mg/L)
Convert concentration to mass flux	Average Flow		
	mass flux of surface water into SW-001	M s1 =	0.26993 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.01100 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.18395 (mg/s)
	mass flux of surface water into SW-002	M s2 =	0.31477 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.01848 (mg/s)
	mass flux of surface water into SW-003	M s3 =	0.09215 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.00657 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep 003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3 003 =	0.00110 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO 003 =	0.00002 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s 003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	0.33984 (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.01917 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep 004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3 004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO 004 =	0.00002 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00008 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00003 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.00338 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs 004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.00083 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00052 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	1.38282 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.08475 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	0.05385 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	0.00480 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	2.15672 (mg/s)
	mass flux of ground water into SW-005	M g5 =	0.13876 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	0.23168 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.02873 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	1.40684 (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	0.07152 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shi =	0.02329 (mg/s)
Mass balance at each node	Average Flow		
	mass flux in river at SW-001	M r1 =	0.4649 (mg/s)
	mass flux in river at SW-002	M r2 =	0.7981 (mg/s)
	mass flux in river at SW-003	M r3 =	0.8980 (mg/s)
	mass flux in river at SW-004	M r4 =	1.2618 (mg/s)
	mass flux in river at SW-004A	M r4A =	2.7881 (mg/s)
	mass flux in river at SW-005	M r5 =	5.0835 (mg/s)
	mass flux in river at USGS Gage	M r6 =	5.3439 (mg/s)
	mass flux into Colby Lake	M cl =	6.8456 (mg/s)
Convert mass flux to concentration	Average Flow		
	concentration in river at SW-001	C r1 =	0.00288 (mg/L)
	concentration in river at SW-002	C r2 =	0.00250 (mg/L)
	concentration in river at SW-003	C r3 =	0.00245 (mg/L)
	concentration in river at SW-004	C r4 =	0.00234 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00226 (mg/L)
	concentration in river at SW-005	C r5 =	0.00219 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00219 (mg/L)
	concentration in Colby Lake	C cl =	0.00217 (mg/L)



**Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1 - Mine Site - Reasonable Alternative 1**

Case		Year 15	
Parameter		Boron	
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0450 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0450 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0450 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0450 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0450 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0450 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0450 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0450 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shi =	0.0450 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0960 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0870 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0870 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0870 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0870 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0870 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0870 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0870 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0870 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.7600 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.7600 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.5059 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.7600 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.7600 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0622 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.0370 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.7600 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.7600 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.5059 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.7600 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.7600 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0622 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0870 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0870 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0870 (mg/L)
	concentration of liner leakage from WWTF pond	C gWTFp =	0.5396 (mg/L)
Convert concentration to mass flux	Average Flow		
	mass flux of surface water into SW-001	M s1 =	5.75674 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.44318 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	2.71680 (mg/s)
	mass flux of surface water into SW-002	M s2 =	6.71309 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.74436 (mg/s)
	mass flux of surface water into SW-003	M s3 =	1.96538 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.26461 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep 003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3 003 =	0.00117 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO 003 =	0.00007 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s 003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	7.24771 (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.77195 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep 004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3 004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO 004 =	0.00007 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00008 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00016 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.13461 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs 004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.03328 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00003 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00007 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00066 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	29.49147 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	3.41361 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	0.18298 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00002 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	0.06572 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	45.99641 (mg/s)
	mass flux of ground water into SW-005	M g5 =	5.58897 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	4.94098 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	1.15719 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	30.00366 (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	2.88066 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shi =	0.49667 (mg/s)
Mass balance at each node	Average Flow		
	mass flux in river at SW-001	M r1 =	8.9167 (mg/s)
	mass flux in river at SW-002	M r2 =	16.3742 (mg/s)
	mass flux in river at SW-003	M r3 =	18.6054 (mg/s)
	mass flux in river at SW-004	M r4 =	26.7940 (mg/s)
	mass flux in river at SW-004A	M r4A =	59.9478 (mg/s)
	mass flux in river at SW-005	M r5 =	111.5332 (mg/s)
	mass flux in river at USGS Gage	M r6 =	117.6314 (mg/s)
Convert mass flux to concentration	Average Flow		
	concentration in river at SW-001	C r1 =	0.05527 (mg/L)
	concentration in river at SW-002	C r2 =	0.05132 (mg/L)
	concentration in river at SW-003	C r3 =	0.05087 (mg/L)
	concentration in river at SW-004	C r4 =	0.04977 (mg/L)
	concentration in river at SW-004A	C r4A =	0.04854 (mg/L)
	concentration in river at SW-005	C r5 =	0.04805 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.04812 (mg/L)
	concentration in Colby Lake	C cl =	0.04786 (mg/L)



**Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1 - Mine Site - Reasonable Alternative 1**

Case		Year 15	
Parameter		Barium	
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0077 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0077 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0077 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0077 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0077 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0077 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0077 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0077 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shi =	0.0077 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0050 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0219 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0219 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0219 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0219 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0219 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0219 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0219 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0219 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.1900 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.1900 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.1900 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.1900 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.1900 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0168 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.0140 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.1900 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.1900 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.1900 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.1900 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.1900 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0168 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0219 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0219 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0219 (mg/L)
	concentration of liner leakage from WWTF pond	C gWTFp =	0.1387 (mg/L)
Convert concentration to mass flux	Average Flow		
	mass flux of surface water into SW-001	M s1 =	0.98248 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.11166 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.14150 (mg/s)
	mass flux of surface water into SW-002	M s2 =	1.14570 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.18754 (mg/s)
	mass flux of surface water into SW-003	M s3 =	0.33543 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.06667 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep 003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3 003 =	0.00029 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO 003 =	0.00002 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s 003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	1.23694 (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.19450 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep 004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3 004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO 004 =	0.00002 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00002 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00004 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.03643 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs 004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.00901 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00001 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00002 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00017 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	5.03321 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.86007 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	0.04574 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	0.02487 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	7.85005 (mg/s)
	mass flux of ground water into SW-005	M g5 =	1.40816 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	0.84326 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.29156 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	5.12062 (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	0.72579 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shi =	0.08476 (mg/s)
Mass balance at each node	Average Flow		
	mass flux in river at SW-001	M r1 =	1.2356 (mg/s)
	mass flux in river at SW-002	M r2 =	2.5689 (mg/s)
	mass flux in river at SW-003	M r3 =	2.9713 (mg/s)
	mass flux in river at SW-004	M r4 =	4.4485 (mg/s)
	mass flux in river at SW-004A	M r4A =	10.4124 (mg/s)
	mass flux in river at SW-005	M r5 =	19.6706 (mg/s)
	mass flux in river at USGS Gage	M r6 =	20.8054 (mg/s)
Convert mass flux to concentration	Average Flow		
	concentration in river at SW-001	C r1 =	0.00766 (mg/L)
	concentration in river at SW-002	C r2 =	0.00805 (mg/L)
	concentration in river at SW-003	C r3 =	0.00812 (mg/L)
	concentration in river at SW-004	C r4 =	0.00826 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00843 (mg/L)
	concentration in river at SW-005	C r5 =	0.00847 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00851 (mg/L)
	concentration in Colby Lake	C cl =	0.00847 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1 - Mine Site - Reasonable Alternative 1

Case		Year 15	
Parameter		Beryllium	
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0001 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0001 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0001 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0001 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0001 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0001 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0001 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0001 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shi =	0.0001 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0001 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0001 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0001 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0001 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0001 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0001 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0001 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0001 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0001 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0002 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0002 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.0023 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	- (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.0002 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0002 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0023 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	- (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0001 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0001 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0001 (mg/L)
	concentration of liner leakage from WWTF pond	C gWTFp =	0.0003 (mg/L)
Convert concentration to mass flux			Average Flow
	mass flux of surface water into SW-001	M s1 =	0.01279 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.00074 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.00283 (mg/s)
	mass flux of surface water into SW-002	M s2 =	0.01492 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.00124 (mg/s)
	mass flux of surface water into SW-003	M s3 =	0.00437 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.00044 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep 003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3 003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO 003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s 003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	0.01611 (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.00129 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep 004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3 004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO 004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	- (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs 004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00000 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	0.06554 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.00569 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	0.00005 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	0.10221 (mg/s)
	mass flux of ground water into SW-005	M g5 =	0.00931 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	0.01098 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.00193 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	0.06667 (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	0.00480 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shi =	0.00110 (mg/s)
Mass balance at each node			Average Flow
	mass flux in river at SW-001	M r1 =	0.0164 (mg/s)
	mass flux in river at SW-002	M r2 =	0.0325 (mg/s)
	mass flux in river at SW-003	M r3 =	0.0373 (mg/s)
	mass flux in river at SW-004	M r4 =	0.0547 (mg/s)
	mass flux in river at SW-004A	M r4A =	0.1260 (mg/s)
	mass flux in river at SW-005	M r5 =	0.2375 (mg/s)
	mass flux in river at USGS Gage	M r6 =	0.2504 (mg/s)
	mass flux into Colby Lake	M cl =	0.3230 (mg/s)
Convert mass flux to concentration			Average Flow
	concentration in river at SW-001	C r1 =	0.00010 (mg/L)
	concentration in river at SW-002	C r2 =	0.00010 (mg/L)
	concentration in river at SW-003	C r3 =	0.00010 (mg/L)
	concentration in river at SW-004	C r4 =	0.00010 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00010 (mg/L)
	concentration in river at SW-005	C r5 =	0.00010 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00010 (mg/L)
	concentration in Colby Lake	C cl =	0.00010 (mg/L)

**Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1 - Mine Site - Reasonable Alternative 1**

Case		Year 15	
Parameter		Calcium	
Input concentration data	concentration of surface water into SW-001	C s1 =	17.0000 (mg/L)
	concentration of surface water into SW-002	C s2 =	17.0000 (mg/L)
	concentration of surface water into SW-003	C s3 =	17.0000 (mg/L)
	concentration of surface water into SW-004	C s4 =	17.0000 (mg/L)
	concentration of surface water into SW-004A	C s4A =	17.0000 (mg/L)
	concentration of surface water into SW-005	C s5 =	17.0000 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	17.0000 (mg/L)
	concentration of surface water into Colby Lake	C scl =	17.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shi =	17.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	24.5000 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	14.7900 (mg/L)
	concentration of ground water into SW-002	C g2 =	14.7900 (mg/L)
	concentration of ground water into SW-003	C g3 =	14.7900 (mg/L)
	concentration of ground water into SW-004	C g4 =	14.7900 (mg/L)
	concentration of ground water into SW-004A	C g4A =	14.7900 (mg/L)
	concentration of ground water into SW-005	C g5 =	14.7900 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	14.7900 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	14.7900 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	540.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	540.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	540.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	540.0000 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	480.0000 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	9.3700 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	15.8000 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	540.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	540.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	540.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	540.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	480.0000 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	9.3700 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	14.7900 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	14.7900 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	14.7900 (mg/L)
	concentration of liner leakage from WWTF pond	C gWTFp =	371.6773 (mg/L)
Convert concentration to mass flux	Average Flow		
	mass flux of surface water into SW-001	M s1 =	2,174.76906 (mg/s)
	mass flux of ground water into SW-001	M g1 =	75.34026 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	693.35000 (mg/s)
	mass flux of surface water into SW-002	M s2 =	2,536.05622 (mg/s)
	mass flux of ground water into SW-002	M g2 =	126.54143 (mg/s)
	mass flux of surface water into SW-003	M s3 =	742.47864 (mg/s)
	mass flux of ground water into SW-003	M g3 =	44.98349 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep 003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3 003 =	0.83361 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO 003 =	0.07039 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s 003 =	0.00044 (mg/s)
	mass flux of surface water into SW-004	M s4 =	2,738.02247 (mg/s)
	mass flux of ground water into SW-004	M g4 =	131.23090 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep 004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3 004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO 004 =	0.07039 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.05870 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.10326 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	20.27794 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs 004 =	0.00042 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00038 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00064 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	5.01400 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00563 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.01206 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.45359 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	11,141.22201 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	580.31365 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	130.01168 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.01183 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	28.06213 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	17,376.42100 (mg/s)
	mass flux of ground water into SW-005	M g5 =	950.12439 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	1,866.59358 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	196.72179 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	11,334.71600 (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	489.71169 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shi =	187.62900 (mg/s)
Mass balance at each node	Average Flow		
	mass flux in river at SW-001	M r1 =	2,943.4593 (mg/s)
	mass flux in river at SW-002	M r2 =	5,606.0570 (mg/s)
	mass flux in river at SW-003	M r3 =	6,394.4235 (mg/s)
	mass flux in river at SW-004	M r4 =	9,285.6739 (mg/s)
	mass flux in river at SW-004A	M r4A =	21,169.2952 (mg/s)
	mass flux in river at SW-005	M r5 =	39,495.8406 (mg/s)
	mass flux in river at USGS Gage	M r6 =	41,559.1560 (mg/s)
Convert mass flux to concentration	Average Flow		
	concentration in river at SW-001	C r1 =	18.24591 (mg/L)
	concentration in river at SW-002	C r2 =	17.57069 (mg/L)
	concentration in river at SW-003	C r3 =	17.48182 (mg/L)
	concentration in river at SW-004	C r4 =	17.25388 (mg/L)
	concentration in river at SW-004A	C r4A =	17.14071 (mg/L)
	concentration in river at SW-005	C r5 =	17.01370 (mg/L)
	concentration in river at USGS Gage	C r6 =	17.00098 (mg/L)
	concentration in Colby Lake	C cl =	16.97757 (mg/L)

**Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1 - Mine Site - Reasonable Alternative 1**

Case	Year 15		
Parameter	Cadmium		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0001 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0001 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0001 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0001 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0001 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0001 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0001 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0001 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shi =	0.0001 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0001 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0001 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0001 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0001 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0001 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0001 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0001 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0001 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0001 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0002 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0002 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.0149 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0001 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.0002 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0002 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0149 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0001 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0001 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0001 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0001 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	0.0005 (mg/L)
		Average Flow	
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	0.01279 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.00051 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.00283 (mg/s)
	mass flux of surface water into SW-002	M s2 =	0.01492 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.00086 (mg/s)
	mass flux of surface water into SW-003	M s3 =	0.00437 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.00030 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	0.01611 (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.00089 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.00013 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.00003 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00000 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	0.06554 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.00392 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	0.00004 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	0.02221 (mg/s)
	mass flux of ground water into SW-005	M g5 =	0.00642 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	0.01098 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.00133 (mg/s)
mass flux of surface water into Colby Lake	M scl =	0.06667 (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	0.00331 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shi =	0.00110 (mg/s)	
Mass balance at each node	Average Flow		
	mass flux in river at SW-001	M r1 =	0.0161 (mg/s)
	mass flux in river at SW-002	M r2 =	0.0319 (mg/s)
	mass flux in river at SW-003	M r3 =	0.0366 (mg/s)
	mass flux in river at SW-004	M r4 =	0.0537 (mg/s)
	mass flux in river at SW-004A	M r4A =	0.1232 (mg/s)
	mass flux in river at SW-005	M r5 =	0.2319 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M r6 =	0.2442 (mg/s)
	mass flux into Colby Lake	M cl =	0.3153 (mg/s)
		Average Flow	
Convert mass flux to concentration	concentration in river at SW-001	C r1 =	0.00010 (mg/L)
	concentration in river at SW-002	C r2 =	0.00010 (mg/L)
	concentration in river at SW-003	C r3 =	0.00010 (mg/L)
	concentration in river at SW-004	C r4 =	0.00010 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00010 (mg/L)
	concentration in river at SW-005	C r5 =	0.00010 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00010 (mg/L)
	concentration in Colby Lake	C cl =	0.00010 (mg/L)

**Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1 - Mine Site - Reasonable Alternative 1**

Case		Year 15	
Parameter		Chloride	
Input concentration data	concentration of surface water into SW-001	C s1 =	8.0000 (mg/L)
	concentration of surface water into SW-002	C s2 =	8.0000 (mg/L)
	concentration of surface water into SW-003	C s3 =	8.0000 (mg/L)
	concentration of surface water into SW-004	C s4 =	8.0000 (mg/L)
	concentration of surface water into SW-004A	C s4A =	8.0000 (mg/L)
	concentration of surface water into SW-005	C s5 =	8.0000 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	8.0000 (mg/L)
	concentration of surface water into Colby Lake	C scl =	8.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shi =	8.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	1.6000 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	6.6000 (mg/L)
	concentration of ground water into SW-002	C g2 =	6.6000 (mg/L)
	concentration of ground water into SW-003	C g3 =	6.6000 (mg/L)
	concentration of ground water into SW-004	C g4 =	6.6000 (mg/L)
	concentration of ground water into SW-004A	C g4A =	6.6000 (mg/L)
	concentration of ground water into SW-005	C g5 =	6.6000 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	6.6000 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	6.6000 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	38.4446 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	- (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	40.3036 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.3392 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.2500 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	5.3500 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	2.3300 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	38.4446 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	- (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	40.3036 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.3392 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.2500 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	5.3500 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	6.6000 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	6.6000 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	6.6000 (mg/L)
	concentration of liner leakage from WWTF pond	C gWTFp =	16.9465 (mg/L)
<b>Average Flow</b>			
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	1,023.42074 (mg/s)
	mass flux of ground water into SW-001	M g1 =	33.62040 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	45.28000 (mg/s)
	mass flux of surface water into SW-002	M s2 =	1,193.43822 (mg/s)
	mass flux of ground water into SW-002	M g2 =	56.46879 (mg/s)
	mass flux of surface water into SW-003	M s3 =	349.40171 (mg/s)
	mass flux of ground water into SW-003	M g3 =	20.07377 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep 003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3 003 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO 003 =	0.00525 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s 003 =	- (mg/s)
	mass flux of surface water into SW-004	M s4 =	1,288.48116 (mg/s)
	mass flux of ground water into SW-004	M g4 =	58.56146 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep 004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3 004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO 004 =	0.00525 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00004 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00005 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	11.57812 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs 004 =	0.00003 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	2.86285 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00251 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00538 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.02068 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	5,242.92800 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	258.96350 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	9.25601 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00084 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	4.13828 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	8,177.13930 (mg/s)
	mass flux of ground water into SW-005	M g5 =	423.99060 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	878.39698 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	87.78660 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	5,333.98400 (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	218.53260 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shi =	88.29600 (mg/s)
<b>Average Flow</b>			
Mass balance at each node	mass flux in river at SW-001	M r1 =	1,102.3211 (mg/s)
	mass flux in river at SW-002	M r2 =	2,352.2281 (mg/s)
	mass flux in river at SW-003	M r3 =	2,721.7089 (mg/s)
	mass flux in river at SW-004	M r4 =	4,083.2264 (mg/s)
	mass flux in river at SW-004A	M r4A =	9,598.5130 (mg/s)
	mass flux in river at SW-005	M r5 =	18,199.6429 (mg/s)
	mass flux in river at USGS Gage	M r6 =	19,165.8265 (mg/s)
	mass flux into Colby Lake	M cl =	24,806.6391 (mg/s)
<b>Average Flow</b>			
Convert mass flux to concentration	concentration in river at SW-001	C r1 =	6.83307 (mg/L)
	concentration in river at SW-002	C r2 =	7.37243 (mg/L)
	concentration in river at SW-003	C r3 =	7.44092 (mg/L)
	concentration in river at SW-004	C r4 =	7.58385 (mg/L)
	concentration in river at SW-004A	C r4A =	7.77188 (mg/L)
	concentration in river at SW-005	C r5 =	7.83990 (mg/L)
	concentration in river at USGS Gage	C r6 =	7.84034 (mg/L)
<b>Average Flow</b>			
Convert mass flux to concentration	concentration in Colby Lake	C cl =	7.86162 (mg/L)



**Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1 - Mine Site - Reasonable Alternative 1**

Case		Year 15	
Parameter		Cobalt	
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0005 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0005 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0005 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0005 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0005 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0005 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0005 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0005 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shi =	0.0005 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0005 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0017 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0017 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0017 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0017 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0017 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0017 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0017 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0017 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.0339 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.0520 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0205 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0520 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	8.0117 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0011 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.0013 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.0339 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.0520 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.0205 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0520 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	8.0117 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0011 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0017 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0017 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0017 (mg/L)
	concentration of liner leakage from WWTF pond	C gWTFp =	0.2761 (mg/L)
Convert concentration to mass flux	Average Flow		
	mass flux of surface water into SW-001	M s1 =	0.06396 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.00841 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.01415 (mg/s)
	mass flux of surface water into SW-002	M s2 =	0.07459 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.01412 (mg/s)
	mass flux of surface water into SW-003	M s3 =	0.02184 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.00502 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep 003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3 003 =	0.00008 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO 003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s 003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	0.08053 (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.01464 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep 004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3 004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO 004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00001 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00172 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.00240 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs 004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00001 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.00059 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00034 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	0.32768 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.06474 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	0.00816 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	0.00231 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	0.51107 (mg/s)
	mass flux of ground water into SW-005	M g5 =	0.10600 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	0.05490 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.02195 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	0.33337 (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	0.05463 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shi =	0.00552 (mg/s)
Mass balance at each node	Average Flow		
	mass flux in river at SW-001	M r1 =	0.0865 (mg/s)
	mass flux in river at SW-002	M r2 =	0.1752 (mg/s)
	mass flux in river at SW-003	M r3 =	0.2022 (mg/s)
	mass flux in river at SW-004	M r4 =	0.3024 (mg/s)
	mass flux in river at SW-004A	M r4A =	0.7053 (mg/s)
	mass flux in river at SW-005	M r5 =	1.3224 (mg/s)
	mass flux in river at USGS Gage	M r6 =	1.3982 (mg/s)
Convert mass flux to concentration	Average Flow		
	concentration in river at SW-001	C r1 =	0.00054 (mg/L)
	concentration in river at SW-002	C r2 =	0.00055 (mg/L)
	concentration in river at SW-003	C r3 =	0.00055 (mg/L)
	concentration in river at SW-004	C r4 =	0.00056 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00057 (mg/L)
	concentration in river at SW-005	C r5 =	0.00057 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00057 (mg/L)
	concentration in Colby Lake	C cl =	0.00057 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1 - Mine Site - Reasonable Alternative 1

Case	Year 15			
Parameter	Copper			
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0017 (mg/L)	
	concentration of surface water into SW-002	C s2 =	0.0017 (mg/L)	
	concentration of surface water into SW-003	C s3 =	0.0017 (mg/L)	
	concentration of surface water into SW-004	C s4 =	0.0017 (mg/L)	
	concentration of surface water into SW-004A	C s4A =	0.0017 (mg/L)	
	concentration of surface water into SW-005	C s5 =	0.0017 (mg/L)	
	concentration of surface water into USGS Gage	C s6 =	0.0017 (mg/L)	
	concentration of surface water into Colby Lake	C scl =	0.0017 (mg/L)	
	concentration of surface water inflow from Hoyt Lakes WWTP	C shi =	0.0190 (mg/L)	
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0012 (mg/L)	
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)	
	concentration of ground water into SW-001	C g1 =	0.0030 (mg/L)	
	concentration of ground water into SW-002	C g2 =	0.0030 (mg/L)	
	concentration of ground water into SW-003	C g3 =	0.0030 (mg/L)	
	concentration of ground water into SW-004	C g4 =	0.0030 (mg/L)	
	concentration of ground water into SW-004A	C g4A =	0.0030 (mg/L)	
	concentration of ground water into SW-005	C g5 =	0.0030 (mg/L)	
	concentration of ground water into USGS Gage	C g6 =	0.0030 (mg/L)	
	concentration of ground water into Colby Lake	C gcl =	0.0030 (mg/L)	
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)	
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)	
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.0920 (mg/L)	
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.0920 (mg/L)	
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0920 (mg/L)	
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0920 (mg/L)	
	concentration of liner leakage from LOSP	C gC4LO =	1.9295 (mg/L)	
	concentration of seepage from Overburden (Storage)	C gOS =	0.0214 (mg/L)	
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.0170 (mg/L)	
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.0920 (mg/L)	
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.0920 (mg/L)	
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.0920 (mg/L)	
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0920 (mg/L)	
	concentration of liner leakage from LOSP sumps	C gC4LOs =	1.9295 (mg/L)	
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0214 (mg/L)	
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)	
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0030 (mg/L)	
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0030 (mg/L)	
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0030 (mg/L)	
	concentration of liner leakage from WWTF pond	C gWTFp =	0.2407 (mg/L)	
			Average Flow	
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	0.21748 (mg/s)	
	mass flux of ground water into SW-001	M g1 =	0.01503 (mg/s)	
	mass flux of surface discharges from upstream of PM-1	M sns =	0.03509 (mg/s)	
	mass flux of surface water into SW-002	M s2 =	0.25361 (mg/s)	
	mass flux of ground water into SW-002	M g2 =	0.02524 (mg/s)	
	mass flux of surface water into SW-003	M s3 =	0.07425 (mg/s)	
	mass flux of ground water into SW-003	M g3 =	0.00897 (mg/s)	
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)	
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.00014 (mg/s)	
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00001 (mg/s)	
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)	
	mass flux of surface water into SW-004	M s4 =	0.27380 (mg/s)	
	mass flux of ground water into SW-004	M g4 =	0.02618 (mg/s)	
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)	
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)	
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)	
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00001 (mg/s)	
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00001 (mg/s)	
	mass flux of liner leakage from LOSP	M gC4LO =	0.00042 (mg/s)	
	mass flux of seepage from Overburden (Storage)	M gOS =	0.04640 (mg/s)	
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)	
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)	
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)	
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.01147 (mg/s)	
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00000 (mg/s)	
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00000 (mg/s)	
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)	
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00029 (mg/s)	
	mass flux of surface water into SW-004A	M s4A =	1.11412 (mg/s)	
	mass flux of ground water into SW-004A	M g4A =	0.11575 (mg/s)	
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)	
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	0.02215 (mg/s)	
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00000 (mg/s)	
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	0.03019 (mg/s)	
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)	
	mass flux of surface water into SW-005	M s5 =	1.73764 (mg/s)	
	mass flux of ground water into SW-005	M g5 =	0.18951 (mg/s)	
	mass flux of surface water into USGS Gage	M s6 =	0.18666 (mg/s)	
	mass flux of ground water into USGS Gage	M g6 =	0.03924 (mg/s)	
	mass flux of surface water into Colby Lake	M scl =	1.13347 (mg/s)	
	mass flux of ground water into Colby Lake	M gcl =	0.09768 (mg/s)	
	mass flux of surface water from Hoyt Lakes WWTP	M shi =	0.20970 (mg/s)	
			Average Flow	
Mass balance at each node	mass flux in river at SW-001	M r1 =	0.2676 (mg/s)	
	mass flux in river at SW-002	M r2 =	0.5464 (mg/s)	
	mass flux in river at SW-003	M r3 =	0.6298 (mg/s)	
	mass flux in river at SW-004	M r4 =	0.9884 (mg/s)	
	mass flux in river at SW-004A	M r4A =	2.2706 (mg/s)	
	mass flux in river at SW-005	M r5 =	4.1978 (mg/s)	
	mass flux in river at USGS Gage	M r6 =	4.4237 (mg/s)	
	mass flux into Colby Lake	M cl =	5.8645 (mg/s)	
			Average Flow	
Convert mass flux to concentration	concentration in river at SW-001	C r1 =	0.00166 (mg/L)	
	concentration in river at SW-002	C r2 =	0.00171 (mg/L)	
	concentration in river at SW-003	C r3 =	0.00172 (mg/L)	
	concentration in river at SW-004	C r4 =	0.00184 (mg/L)	
	concentration in river at SW-004A	C r4A =	0.00184 (mg/L)	
	concentration in river at SW-005	C r5 =	0.00181 (mg/L)	
	concentration in river at USGS Gage	C r6 =	0.00181 (mg/L)	
	concentration in Colby Lake	C cl =	0.00186 (mg/L)	

**Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1 - Mine Site - Reasonable Alternative 1**

Case		Year 15	
Parameter		Fluoride	
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0700 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0700 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0700 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0700 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0700 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0700 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0700 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0700 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shi =	0.0700 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.1400 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.2800 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.2800 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.2800 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.2800 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.2800 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.2800 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.2800 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.2800 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.0621 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.0621 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0621 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0621 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.0622 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.2239 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.4200 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.0621 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.0621 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.0621 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0621 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0622 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.2239 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.2800 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.2800 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.2800 (mg/L)
	concentration of liner leakage from WWTF pond	C gWTFp =	0.1258 (mg/L)
Convert concentration to mass flux			<b>Average Flow</b>
	mass flux of surface water into SW-001	M s1 =	8.95493 (mg/s)
	mass flux of ground water into SW-001	M g1 =	1.42632 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	3.96200 (mg/s)
	mass flux of surface water into SW-002	M s2 =	10.44258 (mg/s)
	mass flux of ground water into SW-002	M g2 =	2.39565 (mg/s)
	mass flux of surface water into SW-003	M s3 =	3.05726 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.85161 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep 003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3 003 =	0.00010 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO 003 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s 003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	11.27421 (mg/s)
	mass flux of ground water into SW-004	M g4 =	2.48443 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep 004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3 004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO 004 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00001 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.48453 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs 004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.11981 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00011 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00023 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00015 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	45.87562 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	10.98633 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	0.01495 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	0.74596 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	71.54997 (mg/s)
	mass flux of ground water into SW-005	M g5 =	17.98748 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	7.68597 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	3.72428 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	46.67236 (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	9.27108 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shi =	0.77259 (mg/s)
Mass balance at each node			<b>Average Flow</b>
	mass flux in river at SW-001	M r1 =	14.3433 (mg/s)
	mass flux in river at SW-002	M r2 =	27.1815 (mg/s)
	mass flux in river at SW-003	M r3 =	31.0905 (mg/s)
	mass flux in river at SW-004	M r4 =	45.4540 (mg/s)
	mass flux in river at SW-004A	M r4A =	103.0768 (mg/s)
	mass flux in river at SW-005	M r5 =	192.6143 (mg/s)
	mass flux in river at USGS Gage	M r6 =	204.0245 (mg/s)
Convert mass flux to concentration			<b>Average Flow</b>
	concentration in river at SW-001	C r1 =	0.08891 (mg/L)
	concentration in river at SW-002	C r2 =	0.08519 (mg/L)
	concentration in river at SW-003	C r3 =	0.08500 (mg/L)
	concentration in river at SW-004	C r4 =	0.08442 (mg/L)
	concentration in river at SW-004A	C r4A =	0.08346 (mg/L)
	concentration in river at SW-005	C r5 =	0.08297 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.08346 (mg/L)
	concentration in Colby Lake	C cl =	0.08263 (mg/L)

**Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1 - Mine Site - Reasonable Alternative 1**

Case Parameter		Year 15 Iron	
Input concentration data	concentration of surface water into SW-001	C s1 =	1.6000 (mg/L)
	concentration of surface water into SW-002	C s2 =	1.6000 (mg/L)
	concentration of surface water into SW-003	C s3 =	1.6000 (mg/L)
	concentration of surface water into SW-004	C s4 =	1.6000 (mg/L)
	concentration of surface water into SW-004A	C s4A =	1.6000 (mg/L)
	concentration of surface water into SW-005	C s5 =	1.6000 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	1.6000 (mg/L)
	concentration of surface water into Colby Lake	C scl =	1.6000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shi =	1.6000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0300 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	2.8440 (mg/L)
	concentration of ground water into SW-002	C g2 =	2.8440 (mg/L)
	concentration of ground water into SW-003	C g3 =	2.8440 (mg/L)
	concentration of ground water into SW-004	C g4 =	2.8440 (mg/L)
	concentration of ground water into SW-004A	C g4A =	2.8440 (mg/L)
	concentration of ground water into SW-005	C g5 =	2.8440 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	2.8440 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	2.8440 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.8100 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.8100 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.8100 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.8100 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	235.0000 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.2255 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.1500 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.8100 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.8100 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.8100 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.8100 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	235.0000 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.2255 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	2.8440 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	2.8440 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	2.8440 (mg/L)
	concentration of liner leakage from WWTF pond	C gWTFp =	4.4681 (mg/L)
Convert concentration to mass flux			<b>Average Flow</b>
	mass flux of surface water into SW-001	M s1 =	204.68415 (mg/s)
	mass flux of ground water into SW-001	M g1 =	14.48734 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.84900 (mg/s)
	mass flux of surface water into SW-002	M s2 =	238.68764 (mg/s)
	mass flux of ground water into SW-002	M g2 =	24.33292 (mg/s)
	mass flux of surface water into SW-003	M s3 =	69.88034 (mg/s)
	mass flux of ground water into SW-003	M g3 =	8.64997 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep 003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3 003 =	0.00125 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO 003 =	0.00011 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s 003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	257.69623 (mg/s)
	mass flux of ground water into SW-004	M g4 =	25.23466 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep 004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3 004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO 004 =	0.00011 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00009 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.05055 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.48801 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs 004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00031 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.12067 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00108 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00232 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00545 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	1,048.58560 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	111.58972 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	0.19502 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00002 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	0.26641 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	1,635.42786 (mg/s)
	mass flux of ground water into SW-005	M g5 =	182.70140 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	175.67940 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	37.82804 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	1,066.79680 (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	94.16768 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shi =	17.65920 (mg/s)
Mass balance at each node			<b>Average Flow</b>
	mass flux in river at SW-001	M r1 =	220.0205 (mg/s)
	mass flux in river at SW-002	M r2 =	483.0410 (mg/s)
	mass flux in river at SW-003	M r3 =	561.5727 (mg/s)
	mass flux in river at SW-004	M r4 =	845.1722 (mg/s)
	mass flux in river at SW-004A	M r4A =	2,005.8090 (mg/s)
	mass flux in river at SW-005	M r5 =	3,823.9382 (mg/s)
	mass flux in river at USGS Gage	M r6 =	4,037.4457 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M cl =	5,216.0694 (mg/s)
			<b>Average Flow</b>
	concentration in river at SW-001	C r1 =	1.36386 (mg/L)
	concentration in river at SW-002	C r2 =	1.51396 (mg/L)
	concentration in river at SW-003	C r3 =	1.53529 (mg/L)
	concentration in river at SW-004	C r4 =	1.56975 (mg/L)
	concentration in river at SW-004A	C r4A =	1.62410 (mg/L)
	concentration in river at SW-005	C r5 =	1.64725 (mg/L)
	concentration in river at USGS Gage	C r6 =	1.65163 (mg/L)
	concentration in Colby Lake	C cl =	1.65306 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1 - Mine Site - Reasonable Alternative 1

Case Parameter	Year 15 Hardness		
Input concentration data	concentration of surface water into SW-001	C s1 =	110.0000 (mg/L)
	concentration of surface water into SW-002	C s2 =	110.0000 (mg/L)
	concentration of surface water into SW-003	C s3 =	110.0000 (mg/L)
	concentration of surface water into SW-004	C s4 =	110.0000 (mg/L)
	concentration of surface water into SW-004A	C s4A =	110.0000 (mg/L)
	concentration of surface water into SW-005	C s5 =	110.0000 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	110.0000 (mg/L)
	concentration of surface water into Colby Lake	C scl =	110.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shi =	110.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	110.0000 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	66.4200 (mg/L)
	concentration of ground water into SW-002	C g2 =	66.4200 (mg/L)
	concentration of ground water into SW-003	C g3 =	66.4200 (mg/L)
	concentration of ground water into SW-004	C g4 =	66.4200 (mg/L)
	concentration of ground water into SW-004A	C g4A =	66.4200 (mg/L)
	concentration of ground water into SW-005	C g5 =	66.4200 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	66.4200 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	66.4200 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	1,729.3495 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	1,729.3495 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	1,729.3495 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	1,729.3495 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	5,305.9274 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	43.5200 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	71.5000 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	1,729.3495 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	1,729.3495 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	1,729.3495 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	1,729.3495 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	5,305.9274 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	43.5200 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	66.4200 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	66.4200 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	66.4200 (mg/L)
	concentration of liner leakage from WWTF pond	C gWTFp =	1,259.8488 (mg/L)
Convert concentration to mass flux	Average Flow		
	mass flux of surface water into SW-001	M s1 =	14,072.03511 (mg/s)
	mass flux of ground water into SW-001	M g1 =	338.34348 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	3,113.00000 (mg/s)
	mass flux of surface water into SW-002	M s2 =	16,409.77552 (mg/s)
	mass flux of ground water into SW-002	M g2 =	568.28140 (mg/s)
	mass flux of surface water into SW-003	M s3 =	4,804.27355 (mg/s)
	mass flux of ground water into SW-003	M g3 =	202.01510 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep 003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3 003 =	2,669.64 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO 003 =	0.22543 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s 003 =	0.00139 (mg/s)
	mass flux of surface water into SW-004	M s4 =	17,716.61599 (mg/s)
	mass flux of ground water into SW-004	M g4 =	589.34119 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep 004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3 004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO 004 =	0.22543 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.18799 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	1.14145 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	94.18314 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs 004 =	0.00133 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00121 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00707 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	23.28806 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.02527 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.05414 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00002 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	1.53752 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	72,090.26005 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	2,606.11445 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	416.36226 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.03789 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	126.99004 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	112,435.66531 (mg/s)
	mass flux of ground water into SW-005	M g5 =	4,266.88722 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	12,077.95847 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	883.45242 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	73,342.28000 (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	2,199.23262 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shi =	1,214.07000 (mg/s)
Mass balance at each node	Average Flow		
	mass flux in river at SW-001	M r1 =	17,523.3786 (mg/s)
	mass flux in river at SW-002	M r2 =	34,501.4355 (mg/s)
	mass flux in river at SW-003	M r3 =	39,510.6206 (mg/s)
	mass flux in river at SW-004	M r4 =	57,337.2304 (mg/s)
	mass flux in river at SW-004A	M r4A =	133,176.9951 (mg/s)
	mass flux in river at SW-005	M r5 =	249,879.5477 (mg/s)
	mass flux in river at USGS Gage	M r6 =	262,940.9586 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M cl =	339,596.5412 (mg/s)
	Average Flow		
	concentration in river at SW-001	C r1 =	108.62389 (mg/L)
	concentration in river at SW-002	C r2 =	108.13556 (mg/L)
	concentration in river at SW-003	C r3 =	108.01874 (mg/L)
	concentration in river at SW-004	C r4 =	107.60785 (mg/L)
	concentration in river at SW-004A	C r4A =	107.83295 (mg/L)
	concentration in river at SW-005	C r5 =	107.64110 (mg/L)
	concentration in river at USGS Gage	C r6 =	107.52276 (mg/L)
	concentration in Colby Lake	C cl =	107.62357 (mg/L)

**Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1 - Mine Site - Reasonable Alternative 1**

Case		Year 15	
Parameter		Potassium	
Input concentration data	concentration of surface water into SW-001	C s1 =	1.3000 (mg/L)
	concentration of surface water into SW-002	C s2 =	1.3000 (mg/L)
	concentration of surface water into SW-003	C s3 =	1.3000 (mg/L)
	concentration of surface water into SW-004	C s4 =	1.3000 (mg/L)
	concentration of surface water into SW-004A	C s4A =	1.3000 (mg/L)
	concentration of surface water into SW-005	C s5 =	1.3000 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	1.3000 (mg/L)
	concentration of surface water into Colby Lake	C scl =	1.3000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shi =	1.3000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	2.7000 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	1.7500 (mg/L)
	concentration of ground water into SW-002	C g2 =	1.7500 (mg/L)
	concentration of ground water into SW-003	C g3 =	1.7500 (mg/L)
	concentration of ground water into SW-004	C g4 =	1.7500 (mg/L)
	concentration of ground water into SW-004A	C g4A =	1.7500 (mg/L)
	concentration of ground water into SW-005	C g5 =	1.7500 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	1.7500 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	1.7500 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	49.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	49.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	49.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	49.0000 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	38.0000 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	2.2600 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	4.4500 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	49.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	49.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	49.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	49.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	38.0000 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	2.2600 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	1.7500 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	1.7500 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	1.7500 (mg/L)
	concentration of liner leakage from WWTF pond	C gWTFp =	34.0332 (mg/L)
Convert concentration to mass flux	Average Flow		
	mass flux of surface water into SW-001	M s1 =	166.30587 (mg/s)
	mass flux of ground water into SW-001	M g1 =	8.91450 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	76.41000 (mg/s)
	mass flux of surface water into SW-002	M s2 =	193.93371 (mg/s)
	mass flux of ground water into SW-002	M g2 =	14.97279 (mg/s)
	mass flux of surface water into SW-003	M s3 =	56.77778 (mg/s)
	mass flux of ground water into SW-003	M g3 =	5.32259 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep 003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3 003 =	0.07564 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO 003 =	0.00639 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s 003 =	0.00004 (mg/s)
	mass flux of surface water into SW-004	M s4 =	209.37819 (mg/s)
	mass flux of ground water into SW-004	M g4 =	15.52766 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep 004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3 004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO 004 =	0.00639 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00533 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00817 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	4.89094 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs 004 =	0.00004 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00003 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00005 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	1.20935 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00067 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00143 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.04153 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	851.97580 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	68.66456 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	11.79736 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00107 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	7.90358 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	1,328.78514 (mg/s)
	mass flux of ground water into SW-005	M g5 =	112.42175 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	142.73951 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	23.27675 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	866.77240 (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	57.94425 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shi =	14.34810 (mg/s)
Mass balance at each node	Average Flow		
	mass flux in river at SW-001	M r1 =	251.6304 (mg/s)
	mass flux in river at SW-002	M r2 =	460.5369 (mg/s)
	mass flux in river at SW-003	M r3 =	522.7193 (mg/s)
	mass flux in river at SW-004	M r4 =	753.7891 (mg/s)
	mass flux in river at SW-004A	M r4A =	1,694.1315 (mg/s)
	mass flux in river at SW-005	M r5 =	3,135.3383 (mg/s)
	mass flux in river at USGS Gage	M r6 =	3,301.3546 (mg/s)
Convert mass flux to concentration	Average Flow		
	concentration in river at SW-001	C r1 =	1.55981 (mg/L)
	concentration in river at SW-002	C r2 =	1.44343 (mg/L)
	concentration in river at SW-003	C r3 =	1.42907 (mg/L)
	concentration in river at SW-004	C r4 =	1.40003 (mg/L)
	concentration in river at SW-004A	C r4A =	1.37173 (mg/L)
	concentration in river at SW-005	C r5 =	1.35062 (mg/L)
	concentration in river at USGS Gage	C r6 =	1.35052 (mg/L)
	concentration in Colby Lake	C cl =	1.34386 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1 - Mine Site - Reasonable Alternative 1

Case		Year 15	
Parameter		Magnesium	
Input concentration data	concentration of surface water into SW-001	C s1 =	8.0000 (mg/L)
	concentration of surface water into SW-002	C s2 =	8.0000 (mg/L)
	concentration of surface water into SW-003	C s3 =	8.0000 (mg/L)
	concentration of surface water into SW-004	C s4 =	8.0000 (mg/L)
	concentration of surface water into SW-004A	C s4A =	8.0000 (mg/L)
	concentration of surface water into SW-005	C s5 =	8.0000 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	8.0000 (mg/L)
	concentration of surface water into Colby Lake	C scl =	8.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shi =	8.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	10.5000 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	8.0200 (mg/L)
	concentration of ground water into SW-002	C g2 =	8.0200 (mg/L)
	concentration of ground water into SW-003	C g3 =	8.0200 (mg/L)
	concentration of ground water into SW-004	C g4 =	8.0200 (mg/L)
	concentration of ground water into SW-004A	C g4A =	8.0200 (mg/L)
	concentration of ground water into SW-005	C g5 =	8.0200 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	8.0200 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	8.0200 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	93.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	93.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	93.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	93.0000 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	998.4675 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	4.8800 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	9.0100 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	93.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	93.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	93.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	93.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	998.4675 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	4.8800 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	8.0200 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	8.0200 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	8.0200 (mg/L)
	concentration of liner leakage from WWTF pond	C gWTFp =	80.9124 (mg/L)
Convert concentration to mass flux	Average Flow		
	mass flux of surface water into SW-001	M s1 =	1,023.42074 (mg/s)
	mass flux of ground water into SW-001	M g1 =	40.85388 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	297.15000 (mg/s)
	mass flux of surface water into SW-002	M s2 =	1,193.43822 (mg/s)
	mass flux of ground water into SW-002	M g2 =	68.61814 (mg/s)
	mass flux of surface water into SW-003	M s3 =	349.40171 (mg/s)
	mass flux of ground water into SW-003	M g3 =	24.39267 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep 003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3 003 =	0.14357 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO 003 =	0.01212 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s 003 =	0.00007 (mg/s)
	mass flux of surface water into SW-004	M s4 =	1,288.48116 (mg/s)
	mass flux of ground water into SW-004	M g4 =	71.16104 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep 004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3 004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO 004 =	0.01212 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.01011 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.21480 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	10.56098 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs 004 =	0.00007 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00007 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00133 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	2.61135 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00305 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00654 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.09875 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	5,242.92800 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	314.67988 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	22.39090 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00204 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	16.00252 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	8,177.13930 (mg/s)
	mass flux of ground water into SW-005	M g5 =	515.21282 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	878.39698 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	106.67402 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	5,333.98400 (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	265.55022 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shi =	88.29600 (mg/s)
Mass balance at each node	Average Flow		
	mass flux in river at SW-001	M r1 =	1,361.4246 (mg/s)
	mass flux in river at SW-002	M r2 =	2,623.4810 (mg/s)
	mass flux in river at SW-003	M r3 =	2,997.4311 (mg/s)
	mass flux in river at SW-004	M r4 =	4,370.5925 (mg/s)
	mass flux in river at SW-004A	M r4A =	9,566.5958 (mg/s)
	mass flux in river at SW-005	M r5 =	18,558.9479 (mg/s)
	mass flux in river at USGS Gage	M r6 =	19,644.0189 (mg/s)
Convert mass flux to concentration	Average Flow		
	concentration in river at SW-001	C r1 =	8.43920 (mg/L)
	concentration in river at SW-002	C r2 =	8.22260 (mg/L)
	concentration in river at SW-003	C r3 =	8.19473 (mg/L)
	concentration in river at SW-004	C r4 =	8.11758 (mg/L)
	concentration in river at SW-004A	C r4A =	8.06992 (mg/L)
	concentration in river at SW-005	C r5 =	8.03775 (mg/L)
	concentration in river at USGS Gage	C r6 =	8.03596 (mg/L)
	concentration in Colby Lake	C cl =	8.02807 (mg/L)



**Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1 - Mine Site - Reasonable Alternative 1**

Case		Year 15	
Parameter		Manganese	
Input concentration data	concentration of surface water into SW-001	C s1 =	0.1500 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.1500 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.1500 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.1500 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.1500 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.1500 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.1500 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.1500 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shi =	0.1500 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0086 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.1240 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.1240 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.1240 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.1240 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.1240 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.1240 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.1240 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.1240 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.5115 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.7500 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.3090 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.7500 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	20.5058 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.1604 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.1160 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.5115 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.7500 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.3090 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.7500 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	20.5058 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.1604 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.1240 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.1240 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.1240 (mg/L)
	concentration of liner leakage from WWTF pond	C gWTFp =	1.1119 (mg/L)
<b>Average Flow</b>			
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	19.18914 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.63166 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.24338 (mg/s)
	mass flux of surface water into SW-002	M s2 =	22.37697 (mg/s)
	mass flux of ground water into SW-002	M g2 =	1.06093 (mg/s)
	mass flux of surface water into SW-003	M s3 =	6.55128 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.37714 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep 003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3 003 =	0.00116 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO 003 =	0.00004 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s 003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	24.15902 (mg/s)
	mass flux of ground water into SW-004	M g4 =	1.10025 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep 004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3 004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO 004 =	0.00004 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00008 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00441 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.34711 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs 004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00003 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.08583 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00005 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00010 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00136 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	98.30490 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	4.86537 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	0.12315 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	0.20603 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	153.32136 (mg/s)
	mass flux of ground water into SW-005	M g5 =	7.96588 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	16.46994 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	1.64932 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	100.01220 (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	4.10576 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shi =	1.65555 (mg/s)
<b>Average Flow</b>			
Mass balance at each node	mass flux in river at SW-001	M r1 =	20.0642 (mg/s)
	mass flux in river at SW-002	M r2 =	43.5021 (mg/s)
	mass flux in river at SW-003	M r3 =	50.4317 (mg/s)
	mass flux in river at SW-004	M r4 =	76.1300 (mg/s)
	mass flux in river at SW-004A	M r4A =	179.6294 (mg/s)
	mass flux in river at SW-005	M r5 =	340.9167 (mg/s)
	mass flux in river at USGS Gage	M r6 =	359.0359 (mg/s)
	mass flux into Colby Lake	M cl =	464.8094 (mg/s)
<b>Average Flow</b>			
Convert mass flux to concentration	concentration in river at SW-001	C r1 =	0.12437 (mg/L)
	concentration in river at SW-002	C r2 =	0.13635 (mg/L)
	concentration in river at SW-003	C r3 =	0.13788 (mg/L)
	concentration in river at SW-004	C r4 =	0.14140 (mg/L)
	concentration in river at SW-004A	C r4A =	0.14545 (mg/L)
	concentration in river at SW-005	C r5 =	0.14686 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.14687 (mg/L)
concentration in Colby Lake		C cl =	0.14731 (mg/L)

**Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1 - Mine Site - Reasonable Alternative 1**

Case		Year 15	
Parameter		Sodium	
Input concentration data	concentration of surface water into SW-001	C s1 =	2.5000 (mg/L)
	concentration of surface water into SW-002	C s2 =	2.5000 (mg/L)
	concentration of surface water into SW-003	C s3 =	2.5000 (mg/L)
	concentration of surface water into SW-004	C s4 =	2.5000 (mg/L)
	concentration of surface water into SW-004A	C s4A =	2.5000 (mg/L)
	concentration of surface water into SW-005	C s5 =	2.5000 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	2.5000 (mg/L)
	concentration of surface water into Colby Lake	C scl =	2.5000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shi =	2.5000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	4.8000 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	13.3300 (mg/L)
	concentration of ground water into SW-002	C g2 =	13.3300 (mg/L)
	concentration of ground water into SW-003	C g3 =	13.3300 (mg/L)
	concentration of ground water into SW-004	C g4 =	13.3300 (mg/L)
	concentration of ground water into SW-004A	C g4A =	13.3300 (mg/L)
	concentration of ground water into SW-005	C g5 =	13.3300 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	13.3300 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	13.3300 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	349.3890 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	651.5481 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	211.1051 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	681.0000 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	125.2850 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	4.6000 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	7.1900 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	349.3890 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	651.5481 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	211.1051 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	681.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	125.2850 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	4.6000 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	13.3300 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	13.3300 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	13.3300 (mg/L)
	concentration of liner leakage from WWTF pond	C gWTFp =	448.5417 (mg/L)
Convert concentration to mass flux	Average Flow		
	mass flux of surface water into SW-001	M s1 =	319.81898 (mg/s)
	mass flux of ground water into SW-001	M g1 =	67.90302 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	135.84000 (mg/s)
	mass flux of surface water into SW-002	M s2 =	372.94944 (mg/s)
	mass flux of ground water into SW-002	M g2 =	114.04985 (mg/s)
	mass flux of surface water into SW-003	M s3 =	109.18804 (mg/s)
	mass flux of ground water into SW-003	M g3 =	40.54293 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep 003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3 003 =	1.00581 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO 003 =	0.02752 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s 003 =	0.00053 (mg/s)
	mass flux of surface water into SW-004	M s4 =	402.65036 (mg/s)
	mass flux of ground water into SW-004	M g4 =	118.27639 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep 004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3 004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO 004 =	0.02752 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.07403 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.02695 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	9.95502 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs 004 =	0.00016 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00048 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00017 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	2.46151 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00507 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.01087 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.54740 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	1.638.41500 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	523.02779 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	84.11972 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00766 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	12.77005 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	2.555.35603 (mg/s)
	mass flux of ground water into SW-005	M g5 =	856.33253 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	274.49906 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	177.30233 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	1.666.87000 (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	441.36963 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shi =	27.59250 (mg/s)
Mass balance at each node	Average Flow		
	mass flux in river at SW-001	M r1 =	523.5620 (mg/s)
	mass flux in river at SW-002	M r2 =	1,010.5613 (mg/s)
	mass flux in river at SW-003	M r3 =	1,161.3261 (mg/s)
	mass flux in river at SW-004	M r4 =	1,695.3620 (mg/s)
	mass flux in river at SW-004A	M r4A =	3,953.7023 (mg/s)
	mass flux in river at SW-005	M r5 =	7,365.3908 (mg/s)
	mass flux in river at USGS Gage	M r6 =	7,817.1922 (mg/s)
Convert mass flux to concentration	Average Flow		
	concentration in river at SW-001	C r1 =	3.24546 (mg/L)
	concentration in river at SW-002	C r2 =	3.16734 (mg/L)
	concentration in river at SW-003	C r3 =	3.17497 (mg/L)
	concentration in river at SW-004	C r4 =	3.14883 (mg/L)
	concentration in river at SW-004A	C r4A =	3.20130 (mg/L)
	concentration in river at SW-005	C r5 =	3.17280 (mg/L)
	concentration in river at USGS Gage	C r6 =	3.19785 (mg/L)
	concentration in Colby Lake	C cl =	3.15427 (mg/L)

**Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1 - Mine Site - Reasonable Alternative 1**

Case		Year 15	
Parameter		Nickel	
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0016 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0016 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0016 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0016 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0016 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0016 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0016 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0016 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shi =	0.0033 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0016 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0163 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0163 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0163 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0163 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0163 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0163 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0163 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0163 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.2206 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.8600 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.1333 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.8600 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	103.7980 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0080 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.0190 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.2206 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.8600 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.1333 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.8600 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	103.7980 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0080 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0163 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0163 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0163 (mg/L)
	concentration of liner leakage from WWTF pond	C gWTFp =	3.6296 (mg/L)
Convert concentration to mass flux	Average Flow		
	mass flux of surface water into SW-001	M s1 =	0.19957 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.08293 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.04387 (mg/s)
	mass flux of surface water into SW-002	M s2 =	0.23272 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.13929 (mg/s)
	mass flux of surface water into SW-003	M s3 =	0.06813 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.04952 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep 003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3 003 =	0.00133 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO 003 =	0.00002 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s 003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	0.25125 (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.14445 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep 004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3 004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO 004 =	0.00002 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00009 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.02233 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.01725 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs 004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00014 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.00426 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00001 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00001 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00443 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	1.02237 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.63878 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	0.05311 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	0.03375 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	1.59454 (mg/s)
	mass flux of ground water into SW-005	M g5 =	1.04584 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	0.17129 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.21654 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	1.04013 (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	0.53905 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shi =	0.03642 (mg/s)
Mass balance at each node	Average Flow		
	mass flux in river at SW-001	M r1 =	0.3264 (mg/s)
	mass flux in river at SW-002	M r2 =	0.6984 (mg/s)
	mass flux in river at SW-003	M r3 =	0.8174 (mg/s)
	mass flux in river at SW-004	M r4 =	1.2616 (mg/s)
	mass flux in river at SW-004A	M r4A =	3.0096 (mg/s)
	mass flux in river at SW-005	M r5 =	5.6500 (mg/s)
	mass flux in river at USGS Gage	M r6 =	6.0378 (mg/s)
Convert mass flux to concentration	Average Flow		
	concentration in river at SW-001	C r1 =	0.00202 (mg/L)
	concentration in river at SW-002	C r2 =	0.00219 (mg/L)
	concentration in river at SW-003	C r3 =	0.00223 (mg/L)
	concentration in river at SW-004	C r4 =	0.00234 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00244 (mg/L)
	concentration in river at SW-005	C r5 =	0.00243 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00247 (mg/L)
	concentration in Colby Lake	C cl =	0.00243 (mg/L)

**Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1 - Mine Site - Reasonable Alternative 1**

Case		Year 15	
Parameter		Lead	
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0005 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0005 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0005 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0005 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0005 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0005 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0005 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0005 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shi =	0.0005 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0002 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0011 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0011 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0011 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0011 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0011 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0011 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0011 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0011 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.0264 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.0239 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0160 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0528 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.0528 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0007 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.0264 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.0239 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.0160 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0528 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0528 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0007 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0011 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0011 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0011 (mg/L)
	concentration of liner leakage from WWTF pond	C gWTFp =	0.0304 (mg/L)
Convert concentration to mass flux	Average Flow		
	mass flux of surface water into SW-001	M s1 =	0.06396 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.00571 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.00425 (mg/s)
	mass flux of surface water into SW-002	M s2 =	0.07459 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.00958 (mg/s)
	mass flux of surface water into SW-003	M s3 =	0.02184 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.00341 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep 003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3 003 =	0.00004 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO 003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s 003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	0.08053 (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.00994 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep 004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3 004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO 004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00001 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.00146 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs 004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.00036 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00004 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	0.32768 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.04395 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	0.00636 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	0.51107 (mg/s)
	mass flux of ground water into SW-005	M g5 =	0.07195 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	0.05490 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.01490 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	0.33337 (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	0.03708 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shi =	0.00552 (mg/s)
Mass balance at each node	Average Flow		
	mass flux in river at SW-001	M r1 =	0.0739 (mg/s)
	mass flux in river at SW-002	M r2 =	0.1581 (mg/s)
	mass flux in river at SW-003	M r3 =	0.1834 (mg/s)
	mass flux in river at SW-004	M r4 =	0.2757 (mg/s)
	mass flux in river at SW-004A	M r4A =	0.6537 (mg/s)
	mass flux in river at SW-005	M r5 =	1.2367 (mg/s)
	mass flux in river at USGS Gage	M r6 =	1.3065 (mg/s)
Convert mass flux to concentration	Average Flow		
	concentration in river at SW-001	C r1 =	0.00046 (mg/L)
	concentration in river at SW-002	C r2 =	0.00050 (mg/L)
	concentration in river at SW-003	C r3 =	0.00050 (mg/L)
	concentration in river at SW-004	C r4 =	0.00051 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00053 (mg/L)
	concentration in river at SW-005	C r5 =	0.00053 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00053 (mg/L)
	concentration in Colby Lake	C cl =	0.00053 (mg/L)

**Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1 - Mine Site - Reasonable Alternative 1**

Case	Year 15		
Parameter	Antimony		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0015 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0015 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0015 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0015 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0015 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0015 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0015 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0015 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shi =	0.0015 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0015 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0015 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0015 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0015 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0015 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0015 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0015 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0015 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0015 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.0800 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.0800 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0800 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0800 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.0603 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0003 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.0004 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.0800 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.0800 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.0800 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0800 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0603 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0003 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0015 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0015 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0015 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	0.0588 (mg/L)
			Average Flow
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	0.19189 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.00764 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.04245 (mg/s)
	mass flux of surface water into SW-002	M s2 =	0.22377 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.01283 (mg/s)
	mass flux of surface water into SW-003	M s3 =	0.06551 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.00456 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.00012 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	0.24159 (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.01331 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00001 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.00065 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.00016 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00007 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	0.98305 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.05886 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	0.01926 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	0.00071 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	1.53321 (mg/s)
	mass flux of ground water into SW-005	M g5 =	0.09636 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	0.16470 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.01995 (mg/s)
mass flux of surface water into Colby Lake	M scl =	1.00012 (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	0.04967 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shi =	0.01656 (mg/s)	
			Average Flow
Mass balance at each node	mass flux in river at SW-001	M r1 =	0.2420 (mg/s)
	mass flux in river at SW-002	M r2 =	0.4786 (mg/s)
	mass flux in river at SW-003	M r3 =	0.5488 (mg/s)
	mass flux in river at SW-004	M r4 =	0.8046 (mg/s)
	mass flux in river at SW-004A	M r4A =	1.8665 (mg/s)
	mass flux in river at SW-005	M r5 =	3.4961 (mg/s)
	mass flux in river at USGS Gage	M r6 =	3.6807 (mg/s)
mass flux into Colby Lake	M cl =	4.7471 (mg/s)	
			Average Flow
Convert mass flux to concentration	concentration in river at SW-001	C r1 =	0.00150 (mg/L)
	concentration in river at SW-002	C r2 =	0.00150 (mg/L)
	concentration in river at SW-003	C r3 =	0.00150 (mg/L)
	concentration in river at SW-004	C r4 =	0.00149 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00151 (mg/L)
	concentration in river at SW-005	C r5 =	0.00151 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00151 (mg/L)
	concentration in Colby Lake	C cl =	0.00150 (mg/L)



**Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1 - Mine Site - Reasonable Alternative 1**

Case		Year 15	
Parameter		Selenium	
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0005 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0005 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0005 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0005 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0005 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0005 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0005 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0005 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shi =	0.0005 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0005 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0019 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0019 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0019 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0019 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0019 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0019 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0019 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0019 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.0029 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.0029 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0029 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0029 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.0029 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0004 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.0019 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.0029 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.0029 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.0029 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0029 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0029 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0004 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0019 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0019 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0019 (mg/L)
	concentration of liner leakage from WWTF pond	C gWTFp =	0.0026 (mg/L)
Convert concentration to mass flux	Average Flow		
	mass flux of surface water into SW-001	M s1 =	0.06396 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.00973 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.01415 (mg/s)
	mass flux of surface water into SW-002	M s2 =	0.07459 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.01634 (mg/s)
	mass flux of surface water into SW-003	M s3 =	0.02184 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.00581 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep 003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3 003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO 003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s 003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	0.08053 (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.01695 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep 004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3 004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO 004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.00096 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs 004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.00024 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00000 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	0.32768 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.07494 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	0.00070 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	0.00337 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	0.51107 (mg/s)
	mass flux of ground water into SW-005	M g5 =	0.12270 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	0.05490 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.02540 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	0.33337 (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	0.06324 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shi =	0.00552 (mg/s)
Mass balance at each node	Average Flow		
	mass flux in river at SW-001	M r1 =	0.0878 (mg/s)
	mass flux in river at SW-002	M r2 =	0.1788 (mg/s)
	mass flux in river at SW-003	M r3 =	0.2064 (mg/s)
	mass flux in river at SW-004	M r4 =	0.3051 (mg/s)
	mass flux in river at SW-004A	M r4A =	0.7118 (mg/s)
	mass flux in river at SW-005	M r5 =	1.3456 (mg/s)
	mass flux in river at USGS Gage	M r6 =	1.4259 (mg/s)
Convert mass flux to concentration	Average Flow		
	concentration in river at SW-001	C r1 =	0.00054 (mg/L)
	concentration in river at SW-002	C r2 =	0.00056 (mg/L)
	concentration in river at SW-003	C r3 =	0.00056 (mg/L)
	concentration in river at SW-004	C r4 =	0.00057 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00058 (mg/L)
	concentration in river at SW-005	C r5 =	0.00058 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00058 (mg/L)
	concentration in Colby Lake	C cl =	0.00058 (mg/L)



**Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1 - Mine Site - Reasonable Alternative 1**

Case		Year 15	
Parameter		Sulfate	
Input concentration data	concentration of surface water into SW-001	C s1 =	9.0000 (mg/L)
	concentration of surface water into SW-002	C s2 =	9.0000 (mg/L)
	concentration of surface water into SW-003	C s3 =	9.0000 (mg/L)
	concentration of surface water into SW-004	C s4 =	9.0000 (mg/L)
	concentration of surface water into SW-004A	C s4A =	9.0000 (mg/L)
	concentration of surface water into SW-005	C s5 =	9.0000 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	9.0000 (mg/L)
	concentration of surface water into Colby Lake	C scl =	9.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shi =	9.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	22.0000 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	16.1300 (mg/L)
	concentration of ground water into SW-002	C g2 =	16.1300 (mg/L)
	concentration of ground water into SW-003	C g3 =	16.1300 (mg/L)
	concentration of ground water into SW-004	C g4 =	16.1300 (mg/L)
	concentration of ground water into SW-004A	C g4A =	16.1300 (mg/L)
	concentration of ground water into SW-005	C g5 =	16.1300 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	16.1300 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	16.1300 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	854.3331 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	2,340.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	516.1986 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	2,340.0000 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	9,600.0000 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	35.1700 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	68.3000 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	854.3331 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	2,340.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	516.1986 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	2,340.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	9,600.0000 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	35.1700 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	16.1300 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	16.1300 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	16.1300 (mg/L)
	concentration of liner leakage from WWTF pond	C gWTFp =	1,604.0588 (mg/L)
		<b>Average Flow</b>	
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	1,151.34833 (mg/s)
	mass flux of ground water into SW-001	M g1 =	82.16622 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	622.60000 (mg/s)
	mass flux of surface water into SW-002	M s2 =	1,342.61800 (mg/s)
	mass flux of ground water into SW-002	M g2 =	138.00631 (mg/s)
	mass flux of surface water into SW-003	M s3 =	393.07693 (mg/s)
	mass flux of ground water into SW-003	M g3 =	49.05907 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep 003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3 003 =	3.61231 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO 003 =	0.06729 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s 003 =	0.00189 (mg/s)
	mass flux of surface water into SW-004	M s4 =	1,449.54131 (mg/s)
	mass flux of ground water into SW-004	M g4 =	143.12065 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep 004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3 004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO 004 =	0.06729 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.25437 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	2.06522 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	76.11262 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs 004 =	0.00040 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00164 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.01279 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	18.81988 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00614 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.01315 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	1.95759 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	5,898.29400 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	632.89109 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	205.69127 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.01872 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	121.30657 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	9,199.28171 (mg/s)
	mass flux of ground water into SW-005	M g5 =	1,036.20733 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	988.19660 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	214.54513 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	6,000.73200 (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	534.08043 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shi =	99.33300 (mg/s)
		<b>Average Flow</b>	
Mass balance at each node	mass flux in river at SW-001	M r1 =	1,856.1145 (mg/s)
	mass flux in river at SW-002	M r2 =	3,336.7389 (mg/s)
	mass flux in river at SW-003	M r3 =	3,782.5563 (mg/s)
	mass flux in river at SW-004	M r4 =	5,474.5294 (mg/s)
	mass flux in river at SW-004A	M r4A =	12,332.7310 (mg/s)
	mass flux in river at SW-005	M r5 =	22,568.2201 (mg/s)
	mass flux in river at USGS Gage	M r6 =	23,770.9618 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M cl =	30,405.1072 (mg/s)
	concentration in river at SW-001	C r1 =	11.50568 (mg/L)
	concentration in river at SW-002	C r2 =	10.45812 (mg/L)
	concentration in river at SW-003	C r3 =	10.34119 (mg/L)
	concentration in river at SW-004	C r4 =	10.16794 (mg/L)
	concentration in river at SW-004A	C r4A =	9.98577 (mg/L)
	concentration in river at SW-005	C r5 =	9.72176 (mg/L)
	concentration in river at USGS Gage	C r6 =	9.72421 (mg/L)
	concentration in Colby Lake	C cl =	9.63586 (mg/L)

**Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1 - Mine Site - Reasonable Alternative 1**

Case		Year 15		
Parameter		Titanium		
Input concentration data	concentration of surface water into SW-001	C s1 =	#N/A	(mg/L)
	concentration of surface water into SW-002	C s2 =	#N/A	(mg/L)
	concentration of surface water into SW-003	C s3 =	#N/A	(mg/L)
	concentration of surface water into SW-004	C s4 =	#N/A	(mg/L)
	concentration of surface water into SW-004A	C s4A =	#N/A	(mg/L)
	concentration of surface water into SW-005	C s5 =	#N/A	(mg/L)
	concentration of surface water into USGS Gage	C s6 =	#N/A	(mg/L)
	concentration of surface water into Colby Lake	C scl =	#N/A	(mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shi =	#N/A	(mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	#N/A	(mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A	(mg/L)
	concentration of ground water into SW-001	C g1 =	#N/A	(mg/L)
	concentration of ground water into SW-002	C g2 =	#N/A	(mg/L)
	concentration of ground water into SW-003	C g3 =	#N/A	(mg/L)
	concentration of ground water into SW-004	C g4 =	#N/A	(mg/L)
	concentration of ground water into SW-004A	C g4A =	#N/A	(mg/L)
	concentration of ground water into SW-005	C g5 =	#N/A	(mg/L)
	concentration of ground water into USGS Gage	C g6 =	#N/A	(mg/L)
	concentration of ground water into Colby Lake	C gcl =	#N/A	(mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A	(mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A	(mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.1202	(mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.2039	(mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0726	(mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.1669	(mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.0474	(mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0024	(mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.0016	(mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.1202	(mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.2039	(mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.0726	(mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.1669	(mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0474	(mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0024	(mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A	(mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	#N/A	(mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	#N/A	(mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	#N/A	(mg/L)
	concentration of liner leakage from WWTF pond	C gWTFp =	0.2175	(mg/L)
		<b>Average Flow</b>		
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	#N/A	(mg/s)
	mass flux of ground water into SW-001	M g1 =	#N/A	(mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	#N/A	(mg/s)
	mass flux of surface water into SW-002	M s2 =	#N/A	(mg/s)
	mass flux of ground water into SW-002	M g2 =	#N/A	(mg/s)
	mass flux of surface water into SW-003	M s3 =	#N/A	(mg/s)
	mass flux of ground water into SW-003	M g3 =	#N/A	(mg/s)
	mass flux of seepage from East Pit to SW-003	M gep 003 =	#N/A	(mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3 003 =	0.00031	(mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO 003 =	0.00001	(mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s 003 =	0.00000	(mg/s)
	mass flux of surface water into SW-004	M s4 =	#N/A	(mg/s)
	mass flux of ground water into SW-004	M g4 =	#N/A	(mg/s)
	mass flux of seepage from East Pit to SW-004	M gep 004 =	#N/A	(mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A	(mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3 004 =	-	(mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO 004 =	0.00001	(mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00002	(mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00001	(mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.00522	(mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs 004 =	0.00000	(mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000	(mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000	(mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.00129	(mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	#N/A	(mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	#N/A	(mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	#N/A	(mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00027	(mg/s)
	mass flux of surface water into SW-004A	M s4A =	#N/A	(mg/s)
	mass flux of ground water into SW-004A	M g4A =	#N/A	(mg/s)
	mass flux of West Pit overflow	M sms =	#N/A	(mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	0.02894	(mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00000	(mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	0.00284	(mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A	(mg/s)
	mass flux of surface water into SW-005	M s5 =	#N/A	(mg/s)
	mass flux of ground water into SW-005	M g5 =	#N/A	(mg/s)
	mass flux of surface water into USGS Gage	M s6 =	#N/A	(mg/s)
	mass flux of ground water into USGS Gage	M g6 =	#N/A	(mg/s)
	mass flux of surface water into Colby Lake	M scl =	#N/A	(mg/s)
	mass flux of surface water into Colby Lake	M gcl =	#N/A	(mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shi =	#N/A	(mg/s)
		<b>Average Flow</b>		
Mass balance at each node	mass flux in river at SW-001	M r1 =	-	(mg/s)
	mass flux in river at SW-002	M r2 =	-	(mg/s)
	mass flux in river at SW-003	M r3 =	0.0003	(mg/s)
	mass flux in river at SW-004	M r4 =	0.0071	(mg/s)
	mass flux in river at SW-004A	M r4A =	0.0389	(mg/s)
	mass flux in river at SW-005	M r5 =	0.0389	(mg/s)
	mass flux in river at USGS Gage	M r6 =	0.0389	(mg/s)
	mass flux into Colby Lake	M cl =	0.0389	(mg/s)
		<b>Average Flow</b>		
Convert mass flux to concentration	concentration in river at SW-001	C r1 =	-	(mg/L)
	concentration in river at SW-002	C r2 =	-	(mg/L)
	concentration in river at SW-003	C r3 =	0.00000	(mg/L)
	concentration in river at SW-004	C r4 =	0.00001	(mg/L)
	concentration in river at SW-004A	C r4A =	0.00003	(mg/L)
	concentration in river at SW-005	C r5 =	0.00002	(mg/L)
	concentration in river at USGS Gage	C r6 =	0.00002	(mg/L)
	concentration in Colby Lake	C cl =	0.00001	(mg/L)

**Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1 - Mine Site - Reasonable Alternative 1**

<b>Case</b>		<b>Year 15</b>	
<b>Parameter</b>		<b>Vanadium</b>	
<b>Input concentration data</b>	concentration of surface water into SW-001	C s1 =	0.0009 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0009 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0009 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0009 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0009 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0009 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0009 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0009 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shi =	0.0009 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0043 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0043 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0043 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0043 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0043 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0043 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0043 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0043 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0043 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.1317 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	1.1626 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0796 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.4270 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.0309 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0017 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.0014 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.1317 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	1.1626 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.0796 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.4270 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0309 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0017 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0043 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0043 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0043 (mg/L)
	concentration of liner leakage from WWTF pond	C gWTFp =	0.9654 (mg/L)
		<b>Average Flow</b>	
<b>Convert concentration to mass flux</b>	mass flux of surface water into SW-001	M s1 =	0.11513 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.02190 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.12169 (mg/s)
	mass flux of surface water into SW-002	M s2 =	0.13426 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.03679 (mg/s)
	mass flux of surface water into SW-003	M s3 =	0.03931 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.01308 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep 003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3 003 =	0.00179 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO 003 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s 003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	0.14495 (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.03815 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep 004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3 004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO 004 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00005 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.00374 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs 004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.00093 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00118 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	0.58983 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.16872 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	0.03171 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	0.00249 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	0.91993 (mg/s)
	mass flux of ground water into SW-005	M g5 =	0.27624 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	0.09882 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.05719 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	0.60007 (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	0.14238 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shi =	0.00993 (mg/s)
		<b>Average Flow</b>	
<b>Mass balance at each node</b>	mass flux in river at SW-001	M r1 =	0.2587 (mg/s)
	mass flux in river at SW-002	M r2 =	0.4296 (mg/s)
	mass flux in river at SW-003	M r3 =	0.4840 (mg/s)
	mass flux in river at SW-004	M r4 =	0.6730 (mg/s)
	mass flux in river at SW-004A	M r4A =	1.4657 (mg/s)
	mass flux in river at SW-005	M r5 =	2.6619 (mg/s)
	mass flux in river at USGS Gage	M r6 =	2.8179 (mg/s)
<b>Convert mass flux to concentration</b>	mass flux into Colby Lake	M cl =	3.5703 (mg/s)
	concentration in river at SW-001	C r1 =	0.00160 (mg/L)
	concentration in river at SW-002	C r2 =	0.00135 (mg/L)
	concentration in river at SW-003	C r3 =	0.00132 (mg/L)
	concentration in river at SW-004	C r4 =	0.00125 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00119 (mg/L)
	concentration in river at SW-005	C r5 =	0.00115 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00115 (mg/L)
	concentration in Colby Lake	C cl =	0.00113 (mg/L)

**Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1 - Mine Site - Reasonable Alternative 1**

Case		Year 15	
Parameter		Zinc	
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0160 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0160 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0160 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0160 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0160 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0160 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0160 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0160 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shi =	0.0620 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0073 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0275 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0275 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0275 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0275 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0275 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0275 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0275 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0275 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.0900 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.0900 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0900 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0900 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	26.0000 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0046 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.0030 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.0900 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.0900 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.0900 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0900 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	26.0000 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0046 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0275 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0275 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0275 (mg/L)
	concentration of liner leakage from WWTF pond	C gWTFp =	0.6716 (mg/L)
Convert concentration to mass flux	Average Flow		
	mass flux of surface water into SW-001	M s1 =	2.04684 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.14009 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.20744 (mg/s)
	mass flux of surface water into SW-002	M s2 =	2.38688 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.23529 (mg/s)
	mass flux of surface water into SW-003	M s3 =	0.69880 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.08364 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep 003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3 003 =	0.00014 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO 003 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s 003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	2.57696 (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.24401 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep 004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3 004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO 004 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00001 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00559 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.00987 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs 004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00003 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.00244 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00001 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00002 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00082 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	10.48586 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	1.07901 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	0.02167 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	0.00533 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	16.35428 (mg/s)
	mass flux of ground water into SW-005	M g5 =	1.76663 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	1.75679 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.36578 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	10.66797 (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	0.91055 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shi =	0.68429 (mg/s)
Mass balance at each node	Average Flow		
	mass flux in river at SW-001	M r1 =	2.3944 (mg/s)
	mass flux in river at SW-002	M r2 =	5.0165 (mg/s)
	mass flux in river at SW-003	M r3 =	5.7891 (mg/s)
	mass flux in river at SW-004	M r4 =	8.6389 (mg/s)
	mass flux in river at SW-004A	M r4A =	20.2306 (mg/s)
	mass flux in river at SW-005	M r5 =	38.3517 (mg/s)
	mass flux in river at USGS Gage	M r6 =	40.4742 (mg/s)
	mass flux into Colby Lake	M cl =	52.7371 (mg/s)
Convert mass flux to concentration	Average Flow		
	concentration in river at SW-001	C r1 =	0.01484 (mg/L)
	concentration in river at SW-002	C r2 =	0.01572 (mg/L)
	concentration in river at SW-003	C r3 =	0.01585 (mg/L)
	concentration in river at SW-004	C r4 =	0.01605 (mg/L)
	concentration in river at SW-004A	C r4A =	0.01638 (mg/L)
	concentration in river at SW-005	C r5 =	0.01652 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.01656 (mg/L)
	concentration in Colby Lake	C cl =	0.01671 (mg/L)

## Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

### FLOWS

Case Flow	Year 15 High Flow Conditions (10-yr, 24-hr rainfall event)		
Total flow in Partridge River	flow in river at SW-001	Q_r1_H =	85.35 (cfs)
	flow in river at SW-002	Q_r2_H =	172.44 (cfs)
	flow in river at SW-003	Q_r3_H =	227.89 (cfs)
	flow in river at SW-004	Q_r4_H =	283.28 (cfs)
	flow in river at SW-004A	Q_r4a_H =	916.49 (cfs)
	flow in river at SW-005	Q_r5_H =	1,082.62 (cfs)
	flow in river at USGS Gage	Q_r6_H =	1,084.14 (cfs)
	total flow into Colby Lake	Q_cl_H =	1,421.67 (cfs)
	flow check	Q_ck_H =	1,421.67 (cfs)
Input flow data	surface water flow into SW-001	Q_s1_H =	84.17 (cfs)
	surface water flow into SW-002	Q_s2_H =	86.78 (cfs)
	surface water flow into SW-003	Q_s3_H =	55.35 (cfs)
	surface water flow into SW-004	Q_s4_H =	54.98 (cfs)
	surface water flow into SW-004A	Q_s4a_H =	631.64 (cfs)
	surface water flow into SW-005	Q_s5_H =	163.86 (cfs)
	surface water flow into USGS Gage	Q_s6_H =	1.05 (cfs)
	surface water flow into Colby Lake	Q_scl_H =	335.97 (cfs)
	surface water inflow from Hoyt Lakes WWTP	Q_shl_H =	0.39 (cfs)
	surface water inflow from discharges upstream of PM-1	Q_sns_H =	1.00 (cfs)
	surface water flow from West Pit overflow	Q_sms_H =	- (cfs)
	ground water flow into SW-001	Q_g1_H =	0.18 (cfs)
	ground water flow into SW-002	Q_g2_H =	0.30 (cfs)
	ground water flow into SW-003	Q_g3_H =	0.11 (cfs)
	ground water flow into SW-004	Q_g4_H =	0.31 (cfs)
	ground water flow into SW-004A	Q_g4a_H =	1.39 (cfs)
	ground water flow into SW-005	Q_g5_H =	2.27 (cfs)
	ground water flow into USGS Gage	Q_g6_H =	0.47 (cfs)
	ground water flow into Colby Lake	Q_gcl_H =	1.17 (cfs)
	ground water seepage from East Pit to SW-003	Q_gep_003_H =	- (cfs)
	ground water seepage from East Pit to SW-004	Q_gep_004_H =	- (cfs)
	ground water seepage from West Pit	Q_gwp_H =	- (cfs)
	ground water liner leakage from Cat 1 stockpile	Q_gC12_H =	0.0227 (cfs)
	ground water liner leakage from Cat 2/3 stockpile to SW-003	Q_gC3_003_H =	0.0003 (cfs)
	ground water liner leakage from Cat 2/3 stockpile to SW-004	Q_gC3_004_H =	- (cfs)
	ground water liner leakage from Cat 3LO stockpile to SW-003	Q_gC3LO_003_H =	0.0001 (cfs)
	ground water liner leakage from Cat 3LO stockpile to SW-004	Q_gC3LO_004_H =	0.0001 (cfs)
	ground water liner leakage from Cat 4 stockpile	Q_gC4_H =	0.0001 (cfs)
	ground water liner leakage from LOSP	Q_gC4LO_H =	0.0002 (cfs)
	ground water seepage from Overburden Storage	Q_gOS_H =	0.0765 (cfs)
	ground water seepage from Overburden (Cat 1)	Q_gO12_H =	0.1674 (cfs)
	ground water liner leakage from Cat 1 sumps	Q_gC12s_H =	0.0000 (cfs)
	ground water liner leakage from Cat 2/3 sumps	Q_gC3s_H =	0.0000 (cfs)
	ground water liner leakage from Cat 3LO sumps	Q_gC3LOs_H =	0.0000 (cfs)
	ground water liner leakage from Cat 4 sumps	Q_gC4s_H =	0.0000 (cfs)
	ground water liner leakage from LOSP sumps	Q_gC4LOs_H =	0.0000 (cfs)
	ground water seepage from Overburden pond - PW1	Q_gOp1_H =	0.0189 (cfs)
	ground water seepage from Overburden pond - PW7	Q_gOp7_H =	- (cfs)
	ground water leakage from Haul Road pond - PW2	Q_gHRp2_H =	0.0000 (cfs)
	ground water leakage from Haul Road pond - PW4	Q_gHRp4_H =	0.0000 (cfs)
	ground water leakage from RTH pond - PW3	Q_gRTHp_H =	0.0000 (cfs)
	ground water liner leakage from WWTF pond	Q_gWTFp_H =	0.0000 (cfs)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case		Year 15	
Parameter	Silver		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0001 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0001 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0001 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0001 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0001 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0001 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0001 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0001 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0001 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0001 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0006 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0006 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0006 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0006 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0006 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0006 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0006 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0006 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0007 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0007 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0007 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0007 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0007 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	- (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0007 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0007 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0007 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0007 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0007 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	- (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0006 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0006 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0006 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0007 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	0.23820 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00280 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.00340 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	0.24560 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.00471 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.15663 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00167 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.15558 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.00488 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	- (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00000 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	1.78754 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.02158 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.00045 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	0.46372 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.03533 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.00296 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.00732 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	0.95080 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.01821 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00110 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	0.2444 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.4947 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.6530 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.8135 (mg/s)
	mass flux in river at SW-004A	M_r4A =	2.6231 (mg/s)
	mass flux in river at SW-005	M_r5 =	3.1221 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	3.1324 (mg/s)
	mass flux into Colby Lake	M_cl =	4.1025 (mg/s)
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C_r1 =	0.00010 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00010 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00010 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00010 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00010 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00010 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00010 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.00011 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case		Year 15	
Parameter	Aluminum		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0700 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0700 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0700 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0700 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0700 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0700 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0700 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0700 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0700 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0173 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.1250 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.1250 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.1250 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.1250 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.1250 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.1250 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.1250 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.1250 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	1.6800 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	1.6800 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	1.6800 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	1.6800 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	83.0000 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.4106 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.1400 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	1.6800 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	1.6800 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	1.6800 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	1.6800 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	83.0000 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.4106 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.1250 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.1250 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.1250 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	2.5729 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	166.74077 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.63675 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.48959 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	171.91695 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	1.06948 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	109.64335 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.38019 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.01348 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00619 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	108.90593 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	1.10912 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00619 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00516 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.50468 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.88859 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00011 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.21972 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00005 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00010 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00314 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	1,251.27494 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	4.90461 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	1.07866 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00004 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.66310 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	324.60517 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	8.03013 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	2.07511 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	1.66263 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	665.55657 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	4.13888 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.77259 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	167.8671 (mg/s)
	mass flux in river at SW-002	M_r2 =	340.8535 (mg/s)
	mass flux in river at SW-003	M_r3 =	450.8968 (mg/s)
	mass flux in river at SW-004	M_r4 =	562.5395 (mg/s)
	mass flux in river at SW-004A	M_r4A =	1,820.4609 (mg/s)
	mass flux in river at SW-005	M_r5 =	2,153.0962 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	2,156.8339 (mg/s)
	mass flux into Colby Lake	M_cl =	2,827.3020 (mg/s)
	High Flow		
	concentration in river at SW-001	C_r1 =	0.06950 (mg/L)
	concentration in river at SW-002	C_r2 =	0.06985 (mg/L)
	concentration in river at SW-003	C_r3 =	0.06991 (mg/L)
	concentration in river at SW-004	C_r4 =	0.07017 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.07019 (mg/L)
	concentration in river at SW-005	C_r5 =	0.07028 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.07030 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.07183 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case		Year 15	
Parameter		Arsenic	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0021 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0021 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0021 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0021 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0021 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0021 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0021 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0021 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0021 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0065 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0022 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0022 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0022 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0022 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0022 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0022 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0022 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0022 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.1552 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.7100 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0940 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.7100 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.1011 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0016 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.0027 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.1552 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.7100 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0940 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.7100 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.1011 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0016 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0022 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0022 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0022 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.4269 (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M_s1 =	5.02604 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.01100 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.18395 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	5.18207 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.01848 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	3.30496 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00657 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00570 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00035 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	3.28274 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.01917 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00035 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00218 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00061 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00338 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00083 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00052 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	37.71700 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.08475 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.09964 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.01279 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	9.78453 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.13876 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.06255 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.02873 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	20.06178 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.07152 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.02329 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	5.2210 (mg/s)
	mass flux in river at SW-002	M_r2 =	10.4215 (mg/s)
	mass flux in river at SW-003	M_r3 =	13.7391 (mg/s)
	mass flux in river at SW-004	M_r4 =	17.0489 (mg/s)
	mass flux in river at SW-004A	M_r4A =	54.9631 (mg/s)
	mass flux in river at SW-005	M_r5 =	64.8864 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	64.5777 (mg/s)
	mass flux into Colby Lake	M_cl =	85.1342 (mg/s)
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C_r1 =	0.00216 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00214 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00213 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00213 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00212 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00212 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00212 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.00215 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case		Year 15	
Parameter		Boron	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0450 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0450 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0450 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0450 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0450 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0450 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0450 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0450 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0450 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0960 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0870 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0870 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0870 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0870 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0870 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0870 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0870 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0870 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.5810 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.7600 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.3521 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.7600 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.7600 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0622 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.0370 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.5810 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.7600 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.3521 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.7600 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.7600 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0622 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0870 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0870 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0870 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.5396 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	107.19050 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.44318 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	2.71680 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	110.51804 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.74436 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	70.48501 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.26461 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00610 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00130 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	70.01095 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.77195 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00130 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00234 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00462 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.13461 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.03328 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00003 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00007 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00066 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	804.39104 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	3.41361 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.37305 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.17525 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	208.67475 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	5.58897 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	1.33400 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	1.15719 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	427.85780 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	2.88066 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.49667 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	110.3505 (mg/s)
	mass flux in river at SW-002	M_r2 =	221.6129 (mg/s)
	mass flux in river at SW-003	M_r3 =	292.3659 (mg/s)
	mass flux in river at SW-004	M_r4 =	363.3287 (mg/s)
	mass flux in river at SW-004A	M_r4A =	1.171.6827 (mg/s)
	mass flux in river at SW-005	M_r5 =	1.385.9464 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	1.358.4378 (mg/s)
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C_r1 =	0.04569 (mg/L)
	concentration in river at SW-002	C_r2 =	0.04541 (mg/L)
	concentration in river at SW-003	C_r3 =	0.04533 (mg/L)
	concentration in river at SW-004	C_r4 =	0.04532 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.04517 (mg/L)
	concentration in river at SW-005	C_r5 =	0.04524 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.04525 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.04656 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case	Year 15		
Parameter	Barium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0077 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0077 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0077 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0077 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0077 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0077 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0077 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0077 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0077 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0050 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0219 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0219 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0219 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0219 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0219 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0219 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0219 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0219 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.1900 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.1900 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.1900 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.1900 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.1900 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0168 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.0140 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.1900 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.1900 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_g3LOs =	0.1900 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.1900 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.1900 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0168 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0219 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0219 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0219 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.1387 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	18.29384 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.11166 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.14150 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	18.86175 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.18754 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	12.02944 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.06667 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00152 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00070 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	11.94854 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.19450 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	0.00070 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00070 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00058 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00116 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.03643 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00901 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00001 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00002 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00017 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	137.28274 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.86007 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.12199 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.06631 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	35.61382 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	1.40816 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.22767 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.29156 (mg/s)
mass flux of surface water into Colby Lake	M_scl =	73.02106 (mg/s)	
mass flux of ground water into Colby Lake	M_gcl =	0.72579 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.08476 (mg/s)	
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	18.5470 (mg/s)
	mass flux in river at SW-002	M_r2 =	37.5963 (mg/s)
	mass flux in river at SW-003	M_r3 =	49.6946 (mg/s)
	mass flux in river at SW-004	M_r4 =	61.8857 (mg/s)
	mass flux in river at SW-004A	M_r4A =	200.2168 (mg/s)
	mass flux in river at SW-005	M_r5 =	237.2388 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	237.7581 (mg/s)
	mass flux into Colby Lake	M_cl =	311.5897 (mg/s)
	High Flow		
	concentration in river at SW-001	C_r1 =	0.00768 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00770 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00771 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00772 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00772 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00774 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00775 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.00812 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case		Year 15	
Parameter		Beryllium	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0001 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0001 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0001 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0001 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0001 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0001 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0001 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0001 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0001 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0001 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0001 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0001 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0001 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0001 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0001 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0001 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0001 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0001 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0002 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0002 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0023 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	- (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0002 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0002 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0023 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	- (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0001 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0001 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0001 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0003 (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M_s1 =	0.23820 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00074 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.00283 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	0.24560 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.00124 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.15663 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00044 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.15558 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.00129 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	- (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00000 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	1.78754 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.00569 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.00013 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	0.46372 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.00931 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.00296 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.00193 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	0.95080 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.00480 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00110 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	0.2418 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.4886 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.6457 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.8026 (mg/s)
	mass flux in river at SW-004A	M_r4A =	2.5959 (mg/s)
	mass flux in river at SW-005	M_r5 =	3.0690 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	3.0738 (mg/s)
	mass flux into Colby Lake	M_cl =	4.0305 (mg/s)
	High Flow		
	concentration in river at SW-001	C_r1 =	0.00010 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00010 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00010 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00010 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00010 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00010 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00010 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.00010 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 15 Calcium		
Input concentration data	concentration of surface water into SW-001	C s1 =	17.0000 (mg/L)
	concentration of surface water into SW-002	C s2 =	17.0000 (mg/L)
	concentration of surface water into SW-003	C s3 =	17.0000 (mg/L)
	concentration of surface water into SW-004	C s4 =	17.0000 (mg/L)
	concentration of surface water into SW-004A	C s4A =	17.0000 (mg/L)
	concentration of surface water into SW-005	C s5 =	17.0000 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	17.0000 (mg/L)
	concentration of surface water into Colby Lake	C scl =	17.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	17.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	24.5000 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	14.7900 (mg/L)
	concentration of ground water into SW-002	C g2 =	14.7900 (mg/L)
	concentration of ground water into SW-003	C g3 =	14.7900 (mg/L)
	concentration of ground water into SW-004	C g4 =	14.7900 (mg/L)
	concentration of ground water into SW-004A	C g4A =	14.7900 (mg/L)
	concentration of ground water into SW-005	C g5 =	14.7900 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	14.7900 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	14.7900 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	540.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	540.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	488.0115 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	540.0000 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	461.9797 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	9.3700 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	15.8000 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	540.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	540.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	488.0115 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	540.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	461.9797 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	9.3700 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	14.7900 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	14.7900 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	14.7900 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	371.6773 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	40,494.18700 (mg/s)
	mass flux of ground water into SW-001	M g1 =	75.34026 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	693.35000 (mg/s)
	mass flux of surface water into SW-002	M s2 =	41,751.26000 (mg/s)
	mass flux of ground water into SW-002	M g2 =	126.54143 (mg/s)
	mass flux of surface water into SW-003	M s3 =	26,627.67013 (mg/s)
	mass flux of ground water into SW-003	M g3 =	44.98349 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	4.33275 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	1.79776 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00044 (mg/s)
	mass flux of surface water into SW-004	M s4 =	26,448.58254 (mg/s)
	mass flux of ground water into SW-004	M g4 =	131.23090 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	1.79776 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	1.65912 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	2.80905 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	20.27794 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00038 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00038 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00062 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	5.01400 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00563 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.01206 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.45359 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	303,881.05772 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	580.31365 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	346.71361 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.01183 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	74.83577 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	78,832.68378 (mg/s)
	mass flux of ground water into SW-005	M g5 =	950.12439 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	503.95620 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	196.72179 (mg/s)
mass flux of surface water into Colby Lake	M scl =	161,635.16700 (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	489.71169 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	187.62900 (mg/s)	
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M r1 =	41,262.8773 (mg/s)
	mass flux in river at SW-002	M r2 =	83,140.6787 (mg/s)
	mass flux in river at SW-003	M r3 =	109,819.4633 (mg/s)
	mass flux in river at SW-004	M r4 =	136,431.3077 (mg/s)
	mass flux in river at SW-004A	M r4A =	441,314.2402 (mg/s)
	mass flux in river at SW-005	M r5 =	521,097.0484 (mg/s)
	mass flux in river at USGS Gage	M r6 =	521,797.7264 (mg/s)
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C r1 =	17.08321 (mg/L)
	concentration in river at SW-002	C r2 =	17.03731 (mg/L)
	concentration in river at SW-003	C r3 =	17.02811 (mg/L)
	concentration in river at SW-004	C r4 =	17.01841 (mg/L)
	concentration in river at SW-004A	C r4A =	17.01507 (mg/L)
	concentration in river at SW-005	C r5 =	17.00813 (mg/L)
	concentration in river at USGS Gage	C r6 =	17.00716 (mg/L)
	concentration in Colby Lake (H	C cl =	17.02543 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case		Year 15	
Parameter		Cadmium	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0001 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0001 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0001 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0001 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0001 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0001 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0001 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0001 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0001 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0001 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0001 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0001 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0001 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0001 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0001 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0001 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0001 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0001 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0002 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0002 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0149 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0001 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0002 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0002 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0149 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0001 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0001 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0001 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0001 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0005 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	0.23820 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00051 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.00283 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	0.24560 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.00086 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.15663 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00030 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.15558 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.00089 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00009 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00013 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00003 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00000 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	1.78754 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.00392 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.00012 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	0.46372 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.00642 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.00296 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.00133 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	0.95080 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.00331 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00110 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	0.2415 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.4880 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.6449 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.8017 (mg/s)
	mass flux in river at SW-004A	M_r4A =	2.5932 (mg/s)
	mass flux in river at SW-005	M_r5 =	3.0634 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	3.0677 (mg/s)
	mass flux into Colby Lake	M_cl =	4.0229 (mg/s)
	High Flow		
	concentration in river at SW-001	C_r1 =	0.00010 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00010 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00010 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00010 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00010 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00010 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00010 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.00010 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 15 Chloride		
Input concentration data	concentration of surface water into SW-001	C s1 =	8.0000 (mg/L)
	concentration of surface water into SW-002	C s2 =	8.0000 (mg/L)
	concentration of surface water into SW-003	C s3 =	8.0000 (mg/L)
	concentration of surface water into SW-004	C s4 =	8.0000 (mg/L)
	concentration of surface water into SW-004A	C s4A =	8.0000 (mg/L)
	concentration of surface water into SW-005	C s5 =	8.0000 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	8.0000 (mg/L)
	concentration of surface water into Colby Lake	C scl =	8.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	8.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	1.6000 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	6.6000 (mg/L)
	concentration of ground water into SW-002	C g2 =	6.6000 (mg/L)
	concentration of ground water into SW-003	C g3 =	6.6000 (mg/L)
	concentration of ground water into SW-004	C g4 =	6.6000 (mg/L)
	concentration of ground water into SW-004A	C g4A =	6.6000 (mg/L)
	concentration of ground water into SW-005	C g5 =	6.6000 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	6.6000 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	6.6000 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	26.6758 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	- (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	28.0456 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.2361 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.1740 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	5.3500 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	2.3300 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	26.6758 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	- (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	28.0456 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.2361 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.1740 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	5.3500 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	6.6000 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	6.6000 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	6.6000 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	16.9465 (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M s1 =	19,056.08800 (mg/s)
	mass flux of ground water into SW-001	M g1 =	33.62040 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	45.28000 (mg/s)
	mass flux of surface water into SW-002	M s2 =	19,647.65177 (mg/s)
	mass flux of ground water into SW-002	M g2 =	56.46879 (mg/s)
	mass flux of surface water into SW-003	M s3 =	12,530.66830 (mg/s)
	mass flux of ground water into SW-003	M g3 =	20.07377 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.10332 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	- (mg/s)
	mass flux of surface water into SW-004	M s4 =	12,446.39179 (mg/s)
	mass flux of ground water into SW-004	M g4 =	58.56146 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.10332 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00073 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00106 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	11.57812 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00002 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	2.86285 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00251 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00538 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.02068 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	143,002.85089 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	258.96350 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	17.12755 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00058 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	11.03591 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	37,097.73354 (mg/s)
	mass flux of ground water into SW-005	M g5 =	423.99060 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	237.15586 (mg/s)
mass flux of ground water into USGS Gage	M g6 =	87.78660 (mg/s)	
mass flux of surface water into Colby Lake	M scl =	76,063.60800 (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	218.53260 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	88.29600 (mg/s)	
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M r1 =	19,134.9884 (mg/s)
	mass flux in river at SW-002	M r2 =	38,839.1090 (mg/s)
	mass flux in river at SW-003	M r3 =	51,389.9543 (mg/s)
	mass flux in river at SW-004	M r4 =	63,909.4822 (mg/s)
	mass flux in river at SW-004A	M r4A =	207,199.4605 (mg/s)
	mass flux in river at SW-005	M r5 =	244,721.1846 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M r6 =	245,046.1271 (mg/s)
	mass flux into Colby Lake	M cl =	321,416.5637 (mg/s)
	High Flow		
	concentration in river at SW-001	C r1 =	7.92206 (mg/L)
	concentration in river at SW-002	C r2 =	7.95897 (mg/L)
	concentration in river at SW-003	C r3 =	7.96829 (mg/L)
	concentration in river at SW-004	C r4 =	7.97205 (mg/L)
	concentration in river at SW-004A	C r4A =	7.98867 (mg/L)
	concentration in river at SW-005	C r5 =	7.98747 (mg/L)
	concentration in river at USGS Gage	C r6 =	7.98688 (mg/L)
	concentration in Colby Lake (H)	C cl =	7.92643 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case		Year 15	
Parameter	Cobalt		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0005 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0005 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0005 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0005 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0005 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0005 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0005 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0005 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0005 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0005 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0017 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0017 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0017 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0017 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0017 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0017 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0017 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0017 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0235 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0520 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0142 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0520 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	5.5768 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0011 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.0013 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0235 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0520 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0142 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0520 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	5.5768 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0011 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0017 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0017 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0017 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.2761 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	1.19101 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00841 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.01415 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	1.22798 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.01412 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.78317 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00502 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00042 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00005 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.77790 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.01464 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00005 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00016 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.03391 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00240 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00001 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00059 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00034 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	8.93768 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.06474 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.01509 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.00616 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	2.31861 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.10600 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.01482 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.02195 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	4.75398 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.05463 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00552 (mg/s)
Mass balance at each node	mass flux in river at SW-001	M_r1 =	1.2136 (mg/s)
	mass flux in river at SW-002	M_r2 =	2.4557 (mg/s)
	mass flux in river at SW-003	M_r3 =	3.2443 (mg/s)
	mass flux in river at SW-004	M_r4 =	4.0743 (mg/s)
	mass flux in river at SW-004A	M_r4A =	13.0960 (mg/s)
	mass flux in river at SW-005	M_r5 =	15.5226 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	15.5594 (mg/s)
	mass flux into Colby Lake	M_cl =	20.3735 (mg/s)
Convert mass flux to concentration	concentration in river at SW-001	C_r1 =	0.00050 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00050 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00050 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00051 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00050 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00051 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00051 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.00054 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 15 Copper		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0017 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0017 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0017 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0017 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0017 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0017 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0017 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0017 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0190 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0012 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0030 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0030 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0030 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0030 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0030 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0030 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0030 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0030 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0920 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0920 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0920 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0920 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	1.3431 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0214 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.0170 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0920 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0920 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_g3LOs =	0.0920 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0920 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	1.3431 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0214 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0030 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0030 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0030 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.2407 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	4.04942 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.01503 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.03509 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	4.17513 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.02524 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	2.66277 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00897 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00074 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00034 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	2.64486 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.02618 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00034 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00028 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00817 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.04640 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.01147 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00029 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	30.38811 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.11575 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.05907 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.08052 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	7.88327 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.18951 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.05040 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.03924 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	16.16352 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.09768 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.20970 (mg/s)
Mass balance at each node	mass flux in river at SW-001	M_r1 =	4.0995 (mg/s)
	mass flux in river at SW-002	M_r2 =	8.2999 (mg/s)
	mass flux in river at SW-003	M_r3 =	10.9727 (mg/s)
	mass flux in river at SW-004	M_r4 =	13.7107 (mg/s)
	mass flux in river at SW-004A	M_r4A =	44.3542 (mg/s)
	mass flux in river at SW-005	M_r5 =	52.4269 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	52.5166 (mg/s)
	mass flux into Colby Lake	M_cl =	68.9875 (mg/s)
Convert mass flux to concentration	concentration in river at SW-001	C_r1 =	0.00170 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00170 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00170 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00171 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00171 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00171 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00171 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.00179 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case		Year 15	
Parameter	Fluoride		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0700 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0700 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0700 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0700 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0700 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0700 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0700 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0700 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0700 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.1400 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.2800 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.2800 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.2800 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.2800 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.2800 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.2800 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.2800 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.2800 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0621 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0621 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0622 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0621 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0622 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.2239 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.4200 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0621 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0621 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0622 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0621 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0622 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.2239 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.2800 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.2800 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.2800 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.1258 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	166.74077 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	1.42632 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	3.96200 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	171.91695 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	2.39565 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	109.64335 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.85161 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00050 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00023 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	108.90593 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	2.48443 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00023 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00019 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00038 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.48453 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.11981 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00011 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00023 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00015 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	1,251.27494 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	10.98633 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.03986 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	1.98931 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	324.60517 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	17.98748 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	2.07511 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	3.72428 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	665.55657 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	9.27108 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.77259 (mg/s)
Mass balance at each node	mass flux in river at SW-001	M_r1 =	172.1291 (mg/s)
	mass flux in river at SW-002	M_r2 =	346.4417 (mg/s)
	mass flux in river at SW-003	M_r3 =	456.9374 (mg/s)
	mass flux in river at SW-004	M_r4 =	568.9334 (mg/s)
	mass flux in river at SW-004A	M_r4A =	1,833.2238 (mg/s)
	mass flux in river at SW-005	M_r5 =	2,175.8164 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	2,181.6158 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	2,857.2161 (mg/s)
	concentration in river at SW-001	C_r1 =	0.07126 (mg/L)
	concentration in river at SW-002	C_r2 =	0.07099 (mg/L)
	concentration in river at SW-003	C_r3 =	0.07085 (mg/L)
	concentration in river at SW-004	C_r4 =	0.07097 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.07068 (mg/L)
	concentration in river at SW-005	C_r5 =	0.07102 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.07111 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.07678 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case		Year 15	
Parameter		Iron	
Input concentration data	concentration of surface water into SW-001	C_s1 =	1.6000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	1.6000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	1.6000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	1.6000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	1.6000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	1.6000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	1.6000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	1.6000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	1.6000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0300 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	2.8440 (mg/L)
	concentration of ground water into SW-002	C_g2 =	2.8440 (mg/L)
	concentration of ground water into SW-003	C_g3 =	2.8440 (mg/L)
	concentration of ground water into SW-004	C_g4 =	2.8440 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	2.8440 (mg/L)
	concentration of ground water into SW-005	C_g5 =	2.8440 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	2.8440 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	2.8440 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.8100 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.8100 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.8100 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.8100 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	235.0000 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.2255 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.1500 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.8100 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.8100 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.8100 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.8100 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	235.0000 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.2255 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	2.8440 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	2.8440 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	2.8440 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	4.4681 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	3,811.21760 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	14.48734 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.84900 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	3,929.53035 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	24.33292 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	2,506.13366 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	8.64997 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00650 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00298 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	2,489.27836 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	25.23466 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00298 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00249 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	1.42891 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.48801 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00031 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.12067 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00108 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00232 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00545 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	28,600.57014 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	111.58972 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.52007 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00002 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.71047 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	7,419.54671 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	182.70140 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	47.43117 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	37.82804 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	15,212.72160 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	94.16768 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	17.65920 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	3,826.5539 (mg/s)
	mass flux in river at SW-002	M_r2 =	7,760.4172 (mg/s)
	mass flux in river at SW-003	M_r3 =	10,295.2103 (mg/s)
	mass flux in river at SW-004	M_r4 =	12,811.7756 (mg/s)
	mass flux in river at SW-004A	M_r4A =	41,525.1660 (mg/s)
	mass flux in river at SW-005	M_r5 =	49,127.4141 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	49,212.6733 (mg/s)
	mass flux into Colby Lake	M_cl =	64,537.2218 (mg/s)
	High Flow		
	concentration in river at SW-001	C_r1 =	1.58423 (mg/L)
	concentration in river at SW-002	C_r2 =	1.59437 (mg/L)
	concentration in river at SW-003	C_r3 =	1.59633 (mg/L)
	concentration in river at SW-004	C_r4 =	1.59814 (mg/L)
	concentration in river at SW-004A	C_r4A =	1.60102 (mg/L)
	concentration in river at SW-005	C_r5 =	1.60347 (mg/L)
	concentration in river at USGS Gage	C_r6 =	1.60401 (mg/L)
	concentration in Colby Lake (H)	C_cl =	1.62855 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 15 Hardness		
Input concentration data	concentration of surface water into SW-001	C s1 =	110.0000 (mg/L)
	concentration of surface water into SW-002	C s2 =	110.0000 (mg/L)
	concentration of surface water into SW-003	C s3 =	110.0000 (mg/L)
	concentration of surface water into SW-004	C s4 =	110.0000 (mg/L)
	concentration of surface water into SW-004A	C s4A =	110.0000 (mg/L)
	concentration of surface water into SW-005	C s5 =	110.0000 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	110.0000 (mg/L)
	concentration of surface water into Colby Lake	C scl =	110.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	110.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	110.0000 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	66.4200 (mg/L)
	concentration of ground water into SW-002	C g2 =	66.4200 (mg/L)
	concentration of ground water into SW-003	C g3 =	66.4200 (mg/L)
	concentration of ground water into SW-004	C g4 =	66.4200 (mg/L)
	concentration of ground water into SW-004A	C g4A =	66.4200 (mg/L)
	concentration of ground water into SW-005	C g5 =	66.4200 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	66.4200 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	66.4200 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	1,729.3495 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	1,729.3495 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	1,590.7461 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	1,729.3495 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	4,012.1997 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	43.5200 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	71.5000 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	1,729.3495 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	1,729.3495 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	1,590.7461 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	1,729.3495 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	4,012.1997 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	43.5200 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	66.4200 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	66.4200 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	66.4200 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	1,259.8488 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	262,021.21000 (mg/s)
	mass flux of ground water into SW-001	M g1 =	338.34348 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	3,113.00000 (mg/s)
	mass flux of surface water into SW-002	M s2 =	270,155.21179 (mg/s)
	mass flux of ground water into SW-002	M g2 =	568.28140 (mg/s)
	mass flux of surface water into SW-003	M s3 =	172,296.68909 (mg/s)
	mass flux of ground water into SW-003	M g3 =	202.01510 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	13.87562 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	5.86007 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00139 (mg/s)
	mass flux of surface water into SW-004	M s4 =	171,137.88704 (mg/s)
	mass flux of ground water into SW-004	M g4 =	589.34119 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	5.86007 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	5.31332 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	24.39599 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	94.18314 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00123 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00121 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00535 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	23.28806 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.02527 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.05414 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00002 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	1.53752 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	##### (mg/s)
	mass flux of ground water into SW-004A	M g4A =	2,606.11445 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	1,110.34999 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.03789 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	338.65554 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	510,093.83620 (mg/s)
	mass flux of ground water into SW-005	M g5 =	4,266.88722 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	3,260.89303 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	883.45242 (mg/s)
mass flux of surface water into Colby Lake	M scl =	##### (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	2,199.23262 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	1,214.07000 (mg/s)	
Mass balance at each node	mass flux in river at SW-001	M r1 =	265,472.5535 (mg/s)
	mass flux in river at SW-002	M r2 =	536,196.0467 (mg/s)
	mass flux in river at SW-003	M r3 =	708,714.4879 (mg/s)
	mass flux in river at SW-004	M r4 =	880,596.3829 (mg/s)
	mass flux in river at SW-004A	M r4A =	2,850,940.7378 (mg/s)
	mass flux in river at SW-005	M r5 =	3,365,301.4612 (mg/s)
	mass flux in river at USGS Gage	M r6 =	3,369,445.8067 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M cl =	4,418,733.7193 (mg/s)
	concentration in river at SW-001	C r1 =	109.90809 (mg/L)
	concentration in river at SW-002	C r2 =	109.87810 (mg/L)
	concentration in river at SW-003	C r3 =	109.89007 (mg/L)
	concentration in river at SW-004	C r4 =	109.84538 (mg/L)
	concentration in river at SW-004A	C r4A =	109.91934 (mg/L)
	concentration in river at SW-005	C r5 =	109.84034 (mg/L)
	concentration in river at USGS Gage	C r6 =	109.82167 (mg/L)
	concentration in Colby Lake (H	C cl =	108.84366 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case		Year 15	
Parameter	Potassium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	1.3000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	1.3000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	1.3000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	1.3000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	1.3000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	1.3000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	1.3000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	1.3000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	1.3000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	2.7000 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	1.7500 (mg/L)
	concentration of ground water into SW-002	C_g2 =	1.7500 (mg/L)
	concentration of ground water into SW-003	C_g3 =	1.7500 (mg/L)
	concentration of ground water into SW-004	C_g4 =	1.7500 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	1.7500 (mg/L)
	concentration of ground water into SW-005	C_g5 =	1.7500 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	1.7500 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	1.7500 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	49.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	49.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	49.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	49.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	38.0000 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	2.2600 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	4.4500 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	49.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	49.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	49.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	49.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	38.0000 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	2.2600 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	1.7500 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	1.7500 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	1.7500 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	34.0332 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	3,096.61430 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	8.91450 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	76.41000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	3,192.74341 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	14.97279 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	2,036.23360 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	5.32259 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.39316 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.18051 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00004 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	2,022.53867 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	15.52766 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.18051 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.15055 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.23106 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	4.89094 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00004 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00003 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00005 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	1.20935 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00067 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00143 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.04153 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	23,237.96324 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	68.66456 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	31.46105 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00107 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	21.07716 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	6,028.38170 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	112.42175 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	38.53783 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	23.27675 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	12,360.33630 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	57.94425 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	14.34810 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	3,181.9388 (mg/s)
	mass flux in river at SW-002	M_r2 =	6,389.6560 (mg/s)
	mass flux in river at SW-003	M_r3 =	8,431.7849 (mg/s)
	mass flux in river at SW-004	M_r4 =	10,476.5574 (mg/s)
	mass flux in river at SW-004A	M_r4A =	33,835.7245 (mg/s)
	mass flux in river at SW-005	M_r5 =	39,976.5280 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	40,058.3425 (mg/s)
	mass flux into Colby Lake	M_cl =	52,470.9712 (mg/s)
	High Flow		
	concentration in river at SW-001	C_r1 =	1.31735 (mg/L)
	concentration in river at SW-002	C_r2 =	1.30938 (mg/L)
	concentration in river at SW-003	C_r3 =	1.30739 (mg/L)
	concentration in river at SW-004	C_r4 =	1.30684 (mg/L)
	concentration in river at SW-004A	C_r4A =	1.30455 (mg/L)
	concentration in river at SW-005	C_r5 =	1.30480 (mg/L)
	concentration in river at USGS Gage	C_r6 =	1.30499 (mg/L)
	concentration in Colby Lake (H)	C_cl =	1.32704 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case		Year 15	
Parameter		Magnesium	
Input concentration data	concentration of surface water into SW-001	C_s1 =	8.0000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	8.0000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	8.0000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	8.0000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	8.0000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	8.0000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	8.0000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	8.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	8.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	10.5000 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	8.0200 (mg/L)
	concentration of ground water into SW-002	C_g2 =	8.0200 (mg/L)
	concentration of ground water into SW-003	C_g3 =	8.0200 (mg/L)
	concentration of ground water into SW-004	C_g4 =	8.0200 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	8.0200 (mg/L)
	concentration of ground water into SW-005	C_g5 =	8.0200 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	8.0200 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	8.0200 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	93.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	93.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	90.8236 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	93.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	695.0117 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	4.8800 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	9.0100 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	93.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	93.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	90.8236 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	93.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	695.0117 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	4.8800 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	8.0200 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	8.0200 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	8.0200 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	80.9124 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	19,056.08800 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	40.85388 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	297.15000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	19,647.65177 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	68.61814 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	12,530.66830 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	24.39267 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.74620 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.33458 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00007 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	12,446.39179 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	71.16104 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.33458 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.28574 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	4.22599 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	10.56098 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00007 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00007 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00093 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	2.61135 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00305 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00654 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.09875 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	143,002.85089 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	314.67988 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	59.71179 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00204 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	42.67533 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	37,097.73354 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	515.21282 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	237.15586 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	106.67402 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	76,063.60800 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	265.55022 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	88.29600 (mg/s)
Mass balance at each node	mass flux in river at SW-001	M_r1 =	19,394.0919 (mg/s)
	mass flux in river at SW-002	M_r2 =	39,110.3618 (mg/s)
	mass flux in river at SW-003	M_r3 =	51,666.5036 (mg/s)
	mass flux in river at SW-004	M_r4 =	64,202.1845 (mg/s)
	mass flux in river at SW-004A	M_r4A =	207,622.1043 (mg/s)
	mass flux in river at SW-005	M_r5 =	245,235.0506 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	245,578.8805 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	321,956.3347 (mg/s)
	concentration in river at SW-001	C_r1 =	8.02933 (mg/L)
	concentration in river at SW-002	C_r2 =	8.01455 (mg/L)
	concentration in river at SW-003	C_r3 =	8.01118 (mg/L)
	concentration in river at SW-004	C_r4 =	8.00856 (mg/L)
	concentration in river at SW-004A	C_r4A =	8.00497 (mg/L)
	concentration in river at SW-005	C_r5 =	8.00425 (mg/L)
	concentration in river at USGS Gage	C_r6 =	8.00425 (mg/L)
	concentration in Colby Lake (H)	C_cl =	8.02178 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case		Year 15	
Parameter	Manganese		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.1500 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.1500 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.1500 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.1500 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.1500 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.1500 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.1500 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.1500 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.1500 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0086 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.1240 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.1240 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.1240 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.1240 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.1240 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.1240 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.1240 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.1240 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.3549 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.7500 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.2151 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.7500 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	14.2736 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.1604 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.1160 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.3549 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.7500 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.2151 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.7500 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	14.2736 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.1604 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.1240 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.1240 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.1240 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	1.1119 (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M_s1 =	357.30165 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.63166 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.24338 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	368.39347 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	1.06093 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	234.95003 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.37714 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00602 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00079 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	233.36985 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	1.10025 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00079 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00230 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.08679 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.34711 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00002 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.08583 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00005 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00010 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00136 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	2.681.30345 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	4.86537 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.22787 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.54943 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	695.58250 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	7.96588 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	4.44667 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	1.64932 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	1.426.19265 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	4.10576 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	1.65555 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	358.1767 (mg/s)
	mass flux in river at SW-002	M_r2 =	727.6311 (mg/s)
	mass flux in river at SW-003	M_r3 =	962.9651 (mg/s)
	mass flux in river at SW-004	M_r4 =	1.197.9595 (mg/s)
	mass flux in river at SW-004A	M_r4A =	3.884.9056 (mg/s)
	mass flux in river at SW-005	M_r5 =	4.588.4540 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	4.594.5500 (mg/s)
	mass flux into Colby Lake	M_cl =	6.026.5040 (mg/s)
	High Flow		
	concentration in river at SW-001	C_r1 =	0.14829 (mg/L)
	concentration in river at SW-002	C_r2 =	0.14911 (mg/L)
	concentration in river at SW-003	C_r3 =	0.14931 (mg/L)
	concentration in river at SW-004	C_r4 =	0.14943 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.14978 (mg/L)
	concentration in river at SW-005	C_r5 =	0.14976 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.14975 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.14858 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 15 Sodium		
Input concentration data	concentration of surface water into SW-001	C s1 =	2.5000 (mg/L)
	concentration of surface water into SW-002	C s2 =	2.5000 (mg/L)
	concentration of surface water into SW-003	C s3 =	2.5000 (mg/L)
	concentration of surface water into SW-004	C s4 =	2.5000 (mg/L)
	concentration of surface water into SW-004A	C s4A =	2.5000 (mg/L)
	concentration of surface water into SW-005	C s5 =	2.5000 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	2.5000 (mg/L)
	concentration of surface water into Colby Lake	C scl =	2.5000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	2.5000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	4.8000 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	13.3300 (mg/L)
	concentration of ground water into SW-002	C g2 =	13.3300 (mg/L)
	concentration of ground water into SW-003	C g3 =	13.3300 (mg/L)
	concentration of ground water into SW-004	C g4 =	13.3300 (mg/L)
	concentration of ground water into SW-004A	C g4A =	13.3300 (mg/L)
	concentration of ground water into SW-005	C g5 =	13.3300 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	13.3300 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	13.3300 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	242.4332 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	453.5286 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	146.8989 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	681.0000 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	87.2082 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	4.6000 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	7.1900 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	242.4332 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	453.5286 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	146.8989 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	681.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	87.2082 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	4.6000 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	13.3300 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	13.3300 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	13.3300 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	448.5417 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	5.955.02750 (mg/s)
	mass flux of ground water into SW-001	M g1 =	67.90302 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	135.84000 (mg/s)
	mass flux of surface water into SW-002	M s2 =	6.139.89118 (mg/s)
	mass flux of ground water into SW-002	M g2 =	114.04985 (mg/s)
	mass flux of surface water into SW-003	M s3 =	3.915.83384 (mg/s)
	mass flux of ground water into SW-003	M g3 =	40.54293 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep 003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3 003 =	3.63894 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO 003 =	0.54115 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s 003 =	0.00037 (mg/s)
	mass flux of surface water into SW-004	M s4 =	3.889.49743 (mg/s)
	mass flux of ground water into SW-004	M g4 =	118.27639 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep 004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3 004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO 004 =	0.54115 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	2.09233 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.53027 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	9.95502 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs 004 =	0.00011 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00048 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00012 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	2.46151 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00507 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.01087 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.54740 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	44.688.39084 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	523.02779 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	155.65718 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00531 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	34.05501 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	11.593.04173 (mg/s)
	mass flux of ground water into SW-005	M g5 =	856.33253 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	74.11121 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	177.30233 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	23.769.87750 (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	441.36963 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl =	27.59250 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M r1 =	6.158.7705 (mg/s)
	mass flux in river at SW-002	M r2 =	12.412.7115 (mg/s)
	mass flux in river at SW-003	M r3 =	16.373.2688 (mg/s)
	mass flux in river at SW-004	M r4 =	20.397.1873 (mg/s)
	mass flux in river at SW-004A	M r4A =	65.798.3234 (mg/s)
	mass flux in river at SW-005	M r5 =	78.247.6977 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M r6 =	78.499.1112 (mg/s)
	mass flux into Colby Lake	M cl =	102.737.9509 (mg/s)
	High Flow		
	concentration in river at SW-001	C r1 =	2.54979 (mg/L)
	concentration in river at SW-002	C r2 =	2.54363 (mg/L)
	concentration in river at SW-003	C r3 =	2.53877 (mg/L)
	concentration in river at SW-004	C r4 =	2.54434 (mg/L)
	concentration in river at SW-004A	C r4A =	2.53688 (mg/L)
	concentration in river at SW-005	C r5 =	2.55393 (mg/L)
	concentration in river at USGS Gage	C r6 =	2.55855 (mg/L)
	concentration in Colby Lake (H	C cl =	2.86381 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case	Year 15		
Parameter	Nickel		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0016 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0016 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0016 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0016 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0016 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0016 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0016 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0016 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0033 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0016 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0163 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0163 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0163 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0163 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0163 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0163 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0163 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0163 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.1531 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.8600 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0927 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.8600 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	72.2515 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0080 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.0190 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.1531 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.8600 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.0927 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.8600 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	72.2515 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0080 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0163 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0163 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0163 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	3.6296 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	3.71594 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.08293 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.04387 (mg/s)
	mass flux of surface water into SW-002	M s2 =	3.83129 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.13929 (mg/s)
	mass flux of surface water into SW-003	M s3 =	2.44348 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.04952 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.00690 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00034 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	2.42705 (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.14445 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00034 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00264 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.43932 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.01725 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00010 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.00426 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00001 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00001 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00443 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	27.88556 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.63878 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	0.09828 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	0.08999 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	7.23406 (mg/s)
	mass flux of ground water into SW-005	M g5 =	1.04584 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	0.04625 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.21654 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	14.83240 (mg/s)
mass flux of ground water into Colby Lake	M gcl =	0.53905 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.03642 (mg/s)	
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M r1 =	3.8427 (mg/s)
	mass flux in river at SW-002	M r2 =	7.8133 (mg/s)
	mass flux in river at SW-003	M r3 =	10.3136 (mg/s)
	mass flux in river at SW-004	M r4 =	13.3534 (mg/s)
	mass flux in river at SW-004A	M r4A =	42.0660 (mg/s)
	mass flux in river at SW-005	M r5 =	50.3459 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M r6 =	50.6087 (mg/s)
	mass flux into Colby Lake	M cl =	66.0166 (mg/s)
	High Flow		
	concentration in river at SW-001	C r1 =	0.00159 (mg/L)
	concentration in river at SW-002	C r2 =	0.00160 (mg/L)
	concentration in river at SW-003	C r3 =	0.00160 (mg/L)
	concentration in river at SW-004	C r4 =	0.00167 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00162 (mg/L)
	concentration in river at SW-005	C r5 =	0.00164 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00165 (mg/L)
	concentration in Colby Lake (H)	C cl =	0.00210 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 15 Lead			
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0005 (mg/L)	
	concentration of surface water into SW-002	C s2 =	0.0005 (mg/L)	
	concentration of surface water into SW-003	C s3 =	0.0005 (mg/L)	
	concentration of surface water into SW-004	C s4 =	0.0005 (mg/L)	
	concentration of surface water into SW-004A	C s4A =	0.0005 (mg/L)	
	concentration of surface water into SW-005	C s5 =	0.0005 (mg/L)	
	concentration of surface water into USGS Gage	C s6 =	0.0005 (mg/L)	
	concentration of surface water into Colby Lake	C scl =	0.0005 (mg/L)	
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0005 (mg/L)	
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0002 (mg/L)	
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)	
	concentration of ground water into SW-001	C g1 =	0.0011 (mg/L)	
	concentration of ground water into SW-002	C g2 =	0.0011 (mg/L)	
	concentration of ground water into SW-003	C g3 =	0.0011 (mg/L)	
	concentration of ground water into SW-004	C g4 =	0.0011 (mg/L)	
	concentration of ground water into SW-004A	C g4A =	0.0011 (mg/L)	
	concentration of ground water into SW-005	C g5 =	0.0011 (mg/L)	
	concentration of ground water into USGS Gage	C g6 =	0.0011 (mg/L)	
	concentration of ground water into Colby Lake	C gcl =	0.0011 (mg/L)	
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)	
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)	
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.0183 (mg/L)	
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.0167 (mg/L)	
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0111 (mg/L)	
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0528 (mg/L)	
	concentration of liner leakage from LOSP	C gC4LO =	0.0528 (mg/L)	
	concentration of seepage from Overburden (Storage)	C gOS =	0.0007 (mg/L)	
	concentration of seepage from Overburden (Cat 1)	C gO12 =	- (mg/L)	
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.0183 (mg/L)	
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.0167 (mg/L)	
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.0111 (mg/L)	
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0528 (mg/L)	
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0528 (mg/L)	
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0007 (mg/L)	
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)	
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0011 (mg/L)	
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0011 (mg/L)	
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0011 (mg/L)	
	concentration of liner leakage from WWTF ponc	C_gWTFp =	0.0304 (mg/L)	
	Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	1.19101 (mg/s)
		mass flux of ground water into SW-001	M g1 =	0.00571 (mg/s)
		mass flux of surface discharges from upstream of PM-1	M sns =	0.00425 (mg/s)
		mass flux of surface water into SW-002	M s2 =	1.22798 (mg/s)
mass flux of ground water into SW-002		M g2 =	0.00958 (mg/s)	
mass flux of surface water into SW-003		M s3 =	0.78317 (mg/s)	
mass flux of ground water into SW-003		M g3 =	0.00341 (mg/s)	
mass flux of seepage from East Pit to SW-003		M gep_003 =	#N/A (mg/s)	
mass flux of liner leakage from Cat 2/3 stockpile to SW-003		M gC3_003 =	0.00013 (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-003		M gC3LO_003 =	0.00004 (mg/s)	
mass flux of liner leakage from Cat 2/3 sumps to SW-003		M gC3s_003 =	0.00000 (mg/s)	
mass flux of surface water into SW-004		M s4 =	0.77790 (mg/s)	
mass flux of ground water into SW-004		M g4 =	0.00994 (mg/s)	
mass flux of seepage from East Pit to SW-004		M gep_004 =	#N/A (mg/s)	
mass flux of seepage from West Pit		M gwp =	#N/A (mg/s)	
mass flux of liner leakage from Cat 2/3 stockpile to SW-004		M gC3_004 =	- (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-004		M gC3LO_004 =	0.00004 (mg/s)	
mass flux of liner leakage from Cat 4 stockpile		M gC4 =	0.00016 (mg/s)	
mass flux of liner leakage from LOSP		M gC4LO =	0.00032 (mg/s)	
mass flux of seepage from Overburden (Storage)		M gOS =	0.00146 (mg/s)	
mass flux of liner leakage from Cat 3LO sumps to SW-004		M gC3LOs_004 =	0.00000 (mg/s)	
mass flux of liner leakage from Cat 4 sumps		M gC4s =	0.00000 (mg/s)	
mass flux of liner leakage from LOSP sumps		M gC4LOs =	0.00000 (mg/s)	
mass flux of seepage from Overburden Ponds - PW1		M gOp1 =	0.00036 (mg/s)	
mass flux of leakage from Haul Road Pond - PW2		M gHRp2 =	0.00000 (mg/s)	
mass flux of leakage from Haul Road Pond - PW4		M gHRp4 =	0.00000 (mg/s)	
mass flux of leakage from RTH Pond - PW3		M gRTHp =	0.00000 (mg/s)	
mass flux of liner leakage from WWTF pond		M gWTFp =	0.00004 (mg/s)	
mass flux of surface water into SW-004A		M s4A =	8.93768 (mg/s)	
mass flux of ground water into SW-004A		M g4A =	0.04395 (mg/s)	
mass flux of West Pit overflow		M sms =	#N/A (mg/s)	
mass flux of liner leakage from Cat 1 stockpile		M gC12 =	0.01177 (mg/s)	
mass flux of liner leakage from Cat 1 sumps		M gC12s =	0.00000 (mg/s)	
mass flux of seepage from Overburden (Cat 1)		M gO12 =	- (mg/s)	
mass flux of seepage from Overburden Pond - PW7		M gOp7 =	#N/A (mg/s)	
mass flux of surface water into SW-005		M s5 =	2.31861 (mg/s)	
mass flux of ground water into SW-005		M g5 =	0.07195 (mg/s)	
mass flux of surface water into USGS Gage		M s6 =	0.01482 (mg/s)	
mass flux of ground water into USGS Gage		M g6 =	0.01490 (mg/s)	
mass flux of surface water into Colby Lake		M scl =	4.75398 (mg/s)	
mass flux of ground water into Colby Lake		M gcl =	0.03708 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP		M shl =	0.00552 (mg/s)	
Mass balance at each node		High Flow		
	mass flux in river at SW-001	M r1 =	1.2010 (mg/s)	
	mass flux in river at SW-002	M r2 =	2.4385 (mg/s)	
	mass flux in river at SW-003	M r3 =	3.2253 (mg/s)	
	mass flux in river at SW-004	M r4 =	4.0155 (mg/s)	
	mass flux in river at SW-004A	M r4A =	13.0089 (mg/s)	
	mass flux in river at SW-005	M r5 =	15.3994 (mg/s)	
	mass flux in river at USGS Gage	M r6 =	15.4291 (mg/s)	
	mass flux into Colby Lake	M cl =	20.2257 (mg/s)	
Convert mass flux to concentration	High Flow			
	concentration in river at SW-001	C r1 =	0.00050 (mg/L)	
	concentration in river at SW-002	C r2 =	0.00050 (mg/L)	
	concentration in river at SW-003	C r3 =	0.00050 (mg/L)	
	concentration in river at SW-004	C r4 =	0.00050 (mg/L)	
	concentration in river at SW-004A	C r4A =	0.00050 (mg/L)	
	concentration in river at SW-005	C r5 =	0.00050 (mg/L)	
	concentration in river at USGS Gage	C r6 =	0.00050 (mg/L)	
	concentration in Colby Lake (H)	C cl =	0.00052 (mg/L)	

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 15 Antimony		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0015 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0015 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0015 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0015 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0015 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0015 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0015 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0015 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0015 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0015 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0015 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0015 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0015 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0015 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0015 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0015 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0015 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0015 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.0800 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.0800 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0800 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0800 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.0420 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0003 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.0004 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.0800 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.0800 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.0800 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0800 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0420 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0003 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0015 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0015 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0015 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	0.0588 (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M s1 =	3.57302 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.00764 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.04245 (mg/s)
	mass flux of surface water into SW-002	M s2 =	3.68393 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.01283 (mg/s)
	mass flux of surface water into SW-003	M s3 =	2.34950 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.00456 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.00064 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00029 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	2.33370 (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.01331 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00029 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00025 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00026 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.00065 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.00016 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00007 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	26.81303 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.05886 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	0.05136 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	0.00189 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	6.95583 (mg/s)
	mass flux of ground water into SW-005	M g5 =	0.09636 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	0.04447 (mg/s)
mass flux of ground water into USGS Gage	M g6 =	0.01995 (mg/s)	
mass flux of surface water into Colby Lake	M scl =	14.26193 (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	0.04967 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.01656 (mg/s)	
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M r1 =	3.6231 (mg/s)
	mass flux in river at SW-002	M r2 =	7.3199 (mg/s)
	mass flux in river at SW-003	M r3 =	9.6749 (mg/s)
	mass flux in river at SW-004	M r4 =	12.0236 (mg/s)
	mass flux in river at SW-004A	M r4A =	38.9487 (mg/s)
	mass flux in river at SW-005	M r5 =	46.0009 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M r6 =	46.0653 (mg/s)
	mass flux into Colby Lake	M cl =	60.3935 (mg/s)
	High Flow		
	concentration in river at SW-001	C r1 =	0.00150 (mg/L)
	concentration in river at SW-002	C r2 =	0.00150 (mg/L)
	concentration in river at SW-003	C r3 =	0.00150 (mg/L)
	concentration in river at SW-004	C r4 =	0.00150 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00150 (mg/L)
	concentration in river at SW-005	C r5 =	0.00150 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00150 (mg/L)
	concentration in Colby Lake (H)	C cl =	0.00151 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case	Year 15		
Parameter	Selenium		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0005 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0005 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0005 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0005 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0005 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0005 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0005 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0005 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0005 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0005 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0019 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0019 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0019 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0019 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0019 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0019 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0019 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0019 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.0029 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.0029 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0029 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0029 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.0029 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0004 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.0019 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.0029 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.0029 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.0029 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0029 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0029 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0004 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0019 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0019 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0019 (mg/L)
	concentration of liner leakage from WWTF pond	C gWTFp =	0.0026 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	1.19101 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.00973 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.01415 (mg/s)
	mass flux of surface water into SW-002	M s2 =	1.22798 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.01634 (mg/s)
	mass flux of surface water into SW-003	M s3 =	0.78317 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.00581 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.00002 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	0.77790 (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.01695 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00001 (mg/s)	
mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00001 (mg/s)	
mass flux of liner leakage from LOSP	M gC4LO =	0.00002 (mg/s)	
mass flux of seepage from Overburden (Storage)	M gOS =	0.00096 (mg/s)	
mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)	
mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)	
mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)	
mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.00024 (mg/s)	
mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00000 (mg/s)	
mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00000 (mg/s)	
mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)	
mass flux of liner leakage from WWTF pond	M gWTFp =	0.00000 (mg/s)	
mass flux of surface water into SW-004A	M s4A =	8.93768 (mg/s)	
mass flux of ground water into SW-004A	M g4A =	0.07494 (mg/s)	
mass flux of West Pit overflow	M sms =	#N/A (mg/s)	
mass flux of liner leakage from Cat 1 stockpile	M gC12 =	0.00186 (mg/s)	
mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00000 (mg/s)	
mass flux of seepage from Overburden (Cat 1)	M gO12 =	0.00900 (mg/s)	
mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)	
mass flux of surface water into SW-005	M s5 =	2.31861 (mg/s)	
mass flux of ground water into SW-005	M g5 =	0.12270 (mg/s)	
mass flux of surface water into USGS Gage	M s6 =	0.01482 (mg/s)	
mass flux of ground water into USGS Gage	M g6 =	0.02540 (mg/s)	
mass flux of surface water into Colby Lake	M scl =	4.75398 (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	0.06324 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.00552 (mg/s)	
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M r1 =	1.2149 (mg/s)
	mass flux in river at SW-002	M r2 =	2.4592 (mg/s)
	mass flux in river at SW-003	M r3 =	3.2482 (mg/s)
	mass flux in river at SW-004	M r4 =	4.0443 (mg/s)
	mass flux in river at SW-004A	M r4A =	13.0678 (mg/s)
	mass flux in river at SW-005	M r5 =	15.5091 (mg/s)
	mass flux in river at USGS Gage	M r6 =	15.5493 (mg/s)
	mass flux into Colby Lake	M cl =	20.3721 (mg/s)
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C r1 =	0.00050 (mg/L)
	concentration in river at SW-002	C r2 =	0.00050 (mg/L)
	concentration in river at SW-003	C r3 =	0.00050 (mg/L)
	concentration in river at SW-004	C r4 =	0.00050 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00050 (mg/L)
	concentration in river at SW-005	C r5 =	0.00051 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00051 (mg/L)
	concentration in Colby Lake (H)	C cl =	0.00054 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 15 Sulfate		
Input concentration data	concentration of surface water into SW-001	C s1 =	9.0000 (mg/L)
	concentration of surface water into SW-002	C s2 =	9.0000 (mg/L)
	concentration of surface water into SW-003	C s3 =	9.0000 (mg/L)
	concentration of surface water into SW-004	C s4 =	9.0000 (mg/L)
	concentration of surface water into SW-004A	C s4A =	9.0000 (mg/L)
	concentration of surface water into SW-005	C s5 =	9.0000 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	9.0000 (mg/L)
	concentration of surface water into Colby Lake	C scl =	9.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	9.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	22.0000 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	16.1300 (mg/L)
	concentration of ground water into SW-002	C g2 =	16.1300 (mg/L)
	concentration of ground water into SW-003	C g3 =	16.1300 (mg/L)
	concentration of ground water into SW-004	C g4 =	16.1300 (mg/L)
	concentration of ground water into SW-004A	C g4A =	16.1300 (mg/L)
	concentration of ground water into SW-005	C g5 =	16.1300 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	16.1300 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	16.1300 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	592.8026 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	2,340.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	359.2002 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	2,340.0000 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	8,920.2430 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	35.1700 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	68.3000 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	592.8026 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	2,340.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	359.2002 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	2,340.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	8,920.2430 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	35.1700 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	16.1300 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	16.1300 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	16.1300 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	1,604.0588 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	21,438.09900 (mg/s)
	mass flux of ground water into SW-001	M g1 =	82.16622 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	622.60000 (mg/s)
	mass flux of surface water into SW-002	M s2 =	22,103.60824 (mg/s)
	mass flux of ground water into SW-002	M g2 =	138.00631 (mg/s)
	mass flux of surface water into SW-003	M s3 =	14,097.00183 (mg/s)
	mass flux of ground water into SW-003	M g3 =	49.05907 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	18.77524 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	1.32324 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00189 (mg/s)
	mass flux of surface water into SW-004	M s4 =	14,002.19076 (mg/s)
	mass flux of ground water into SW-004	M g4 =	143.12065 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	1.32324 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	7.18950 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	54.23912 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	76.11262 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00028 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00164 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.01188 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	18.81988 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00614 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.01315 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	1.95759 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	160,878.20703 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	632.89109 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	380.61616 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.01299 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	323.49893 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	41,734.95023 (mg/s)
	mass flux of ground water into SW-005	M g5 =	1,036.20733 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	266.80034 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	214.54513 (mg/s)
mass flux of surface water into Colby Lake	M scl =	85,571.55900 (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	534.08043 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	99.33300 (mg/s)	
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M r1 =	22,142.8652 (mg/s)
	mass flux in river at SW-002	M r2 =	44,384.4798 (mg/s)
	mass flux in river at SW-003	M r3 =	58,550.6410 (mg/s)
	mass flux in river at SW-004	M r4 =	72,855.6294 (mg/s)
	mass flux in river at SW-004A	M r4A =	235,070.8566 (mg/s)
	mass flux in river at SW-005	M r5 =	277,842.0131 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M r6 =	278,323.3586 (mg/s)
	mass flux into Colby Lake	M cl =	364,528.3310 (mg/s)
	High Flow		
	concentration in river at SW-001	C r1 =	9.16735 (mg/L)
	concentration in river at SW-002	C r2 =	9.09533 (mg/L)
	concentration in river at SW-003	C r3 =	9.07860 (mg/L)
	concentration in river at SW-004	C r4 =	9.08799 (mg/L)
	concentration in river at SW-004A	C r4A =	9.06327 (mg/L)
	concentration in river at SW-005	C r5 =	9.06851 (mg/L)
	concentration in river at USGS Gage	C r6 =	9.07150 (mg/L)
	concentration in Colby Lake (H)	C cl =	9.38505 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case		Year 15	
Parameter	Thallium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0004 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0004 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0004 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0004 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0004 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0004 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0004 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0004 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0004 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0003 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0000 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0000 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0000 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0000 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0000 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0000 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0000 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0000 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0001 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0000 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0001 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0000 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0000 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0000 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0000 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0004 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	0.95280 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00002 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.00809 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	0.98238 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.00003 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.62653 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00001 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.62232 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.00004 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00009 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00002 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00000 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	7.15014 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.00016 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	1.85489 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.00026 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.01186 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.00005 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	3.80318 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.00013 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00441 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	0.9609 (mg/s)
	mass flux in river at SW-002	M_r2 =	1.9433 (mg/s)
	mass flux in river at SW-003	M_r3 =	2.5699 (mg/s)
	mass flux in river at SW-004	M_r4 =	3.1923 (mg/s)
	mass flux in river at SW-004A	M_r4A =	10.3427 (mg/s)
	mass flux in river at SW-005	M_r5 =	12.1978 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	12.2097 (mg/s)
	mass flux into Colby Lake	M_cl =	16.0174 (mg/s)
	High Flow		
	concentration in river at SW-001	C_r1 =	0.00040 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00040 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00040 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00040 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00040 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00040 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00040 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.00039 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case		Year 15	
Parameter		Vanadium	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0009 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0009 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0009 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0009 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0009 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0009 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0009 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0009 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0009 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0043 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0043 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0043 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0043 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0043 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0043 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0043 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0043 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0043 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0914 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.8093 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0554 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.2973 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0215 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0017 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.0014 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0914 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.8093 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0554 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.2973 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0215 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0017 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0043 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0043 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0043 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.9654 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	2.14381 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.02190 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.12169 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	2.21036 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.03679 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	1.40970 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.01308 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00649 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00020 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	1.40022 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.03815 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00020 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00091 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00013 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00374 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00093 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00118 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	16.08782 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.16872 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.05867 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.00663 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	4.17350 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.27624 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.02668 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.05719 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	8.55716 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.14238 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00993 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	2.2874 (mg/s)
	mass flux in river at SW-002	M_r2 =	4.5346 (mg/s)
	mass flux in river at SW-003	M_r3 =	5.9640 (mg/s)
	mass flux in river at SW-004	M_r4 =	7.4095 (mg/s)
	mass flux in river at SW-004A	M_r4A =	23.7314 (mg/s)
	mass flux in river at SW-005	M_r5 =	28.1811 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	28.2650 (mg/s)
	mass flux into Colby Lake	M_cl =	36.9744 (mg/s)
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C_r1 =	0.00095 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00093 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00092 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00092 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00091 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00092 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00092 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.00103 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case		Year 15	
Parameter	Zinc		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0160 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0160 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0160 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0160 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0160 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0160 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0160 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0160 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0620 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0073 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0275 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0275 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0275 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0275 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0275 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0275 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0275 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0275 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0900 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0900 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0900 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0900 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	26.0000 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0046 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.0030 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0900 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0900 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0900 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0900 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	26.0000 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0046 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0275 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0275 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0275 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.6716 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	38.11218 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.14009 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.20744 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	39.29530 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.23529 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	25.06134 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.08364 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00072 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00033 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	24.89278 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.24401 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00033 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00028 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.15809 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00987 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00003 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00244 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00001 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00002 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00082 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	286.00570 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	1.07901 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.05779 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.01421 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	74.19547 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	1.76663 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.47431 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.36578 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	152.12722 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.91055 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.68429 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	38.4597 (mg/s)
	mass flux in river at SW-002	M_r2 =	77.5903 (mg/s)
	mass flux in river at SW-003	M_r3 =	103.1363 (mg/s)
	mass flux in river at SW-004	M_r4 =	128.4450 (mg/s)
	mass flux in river at SW-004A	M_r4A =	415.6017 (mg/s)
	mass flux in river at SW-005	M_r5 =	491.5638 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	492.4039 (mg/s)
	mass flux into Colby Lake	M_cl =	646.1260 (mg/s)
	High Flow		
	concentration in river at SW-001	C_r1 =	0.01592 (mg/L)
	concentration in river at SW-002	C_r2 =	0.01598 (mg/L)
	concentration in river at SW-003	C_r3 =	0.01599 (mg/L)
	concentration in river at SW-004	C_r4 =	0.01602 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.01602 (mg/L)
	concentration in river at SW-005	C_r5 =	0.01604 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.01605 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.01641 (mg/L)

***Appendix H.13***  
***Partridge River***  
***Reasonable Alternative***  
***Year 20***

## Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

### FLOWS

Case	Year 20			
Flows	Low Flow Conditions (no surface runoff)			
Total flow in Partridge River	flow in river at SW-001	Q_r1_L =	1.18	(cfs)
	flow in river at SW-002	Q_r2_L =	1.44	(cfs)
	flow in river at SW-003	Q_r3_L =	1.55	(cfs)
	flow in river at SW-004	Q_r4_L =	1.96	(cfs)
	flow in river at SW-004A	Q_r4a_L =	3.39	(cfs)
	flow in river at SW-005	Q_r5_L =	5.66	(cfs)
	flow in river at USGS Gage	Q_r6_L =	6.13	(cfs)
	total flow into Colby Lake	Q_cl_L =	7.69	(cfs)
	flow check	Q_ck_L =	7.69	(cfs)
Input flow data	surface water flow into SW-001	Q_s1_L =	-	(cfs)
	surface water flow into SW-002	Q_s2_L =	-	(cfs)
	surface water flow into SW-003	Q_s3_L =	-	(cfs)
	surface water flow into SW-004	Q_s4_L =	-	(cfs)
	surface water flow into SW-004A	Q_s4a_L =	-	(cfs)
	surface water flow into SW-005	Q_s5_L =	-	(cfs)
	surface water flow into USGS Gage	Q_s6_L =	-	(cfs)
	surface water flow into Colby Lake	Q_scl_L =	-	(cfs)
	surface water inflow from Hoyt Lakes WWTP	Q_shl_L =	0.39	(cfs)
	surface water inflow from discharges upstream of PM-1	Q_sns_L =	1.00	(cfs)
	surface water flow from West Pit overflow	Q_sms_L =	-	(cfs)
	ground water flow into SW-001	Q_g1_L =	0.18	(cfs)
	ground water flow into SW-002	Q_g2_L =	0.26	(cfs)
	ground water flow into SW-003	Q_g3_L =	0.10	(cfs)
	ground water flow into SW-004	Q_g4_L =	0.30	(cfs)
	ground water flow into SW-004A	Q_g4a_L =	1.38	(cfs)
	ground water flow into SW-005	Q_g5_L =	2.27	(cfs)
	ground water flow into USGS Gage	Q_g6_L =	0.47	(cfs)
	ground water flow into Colby Lake	Q_gcl_L =	1.17	(cfs)
	ground water seepage from East Pit to SW-003	Q_gep_003_L =	0.0112	(cfs)
	ground water seepage from East Pit to SW-004	Q_gep_004_L =	0.0112	(cfs)
	ground water seepage from West Pit	Q_gwp_L =	-	(cfs)
	ground water liner leakage from Cat 1 stockpile	Q_gC12_L =	0.0062	(cfs)
	ground water liner leakage from Cat 2/3 stockpile to SW-003	Q_gC3_003_L =	0.0000	(cfs)
	ground water liner leakage from Cat 2/3 stockpile to SW-004	Q_gC3_004_L =	-	(cfs)
	ground water liner leakage from Cat 3LO stockpile to SW-003	Q_gC3LO_003_L =	0.0000	(cfs)
	ground water liner leakage from Cat 3LO stockpile to SW-004	Q_gC3LO_004_L =	0.0000	(cfs)
	ground water liner leakage from Cat 4 stockpile	Q_gC4_L =	0.0000	(cfs)
	ground water liner leakage from LO SP	Q_gC4LO_L =	0.0000	(cfs)
	ground water seepage from Overburden Storage	Q_gOS_L =	0.0765	(cfs)
	ground water seepage from Overburden (Cat 1)	Q_gO12_L =	0.0457	(cfs)
	ground water liner leakage from Cat 1 sumps	Q_gC12s_L =	0.0000	(cfs)
	ground water liner leakage from Cat 2/3 sumps	Q_gC3s_L =	0.0000	(cfs)
	ground water liner leakage from Cat 3LO sumps	Q_gC3LOs_L =	0.0000	(cfs)
	ground water liner leakage from Cat 4 sumps	Q_gC4s_L =	0.0000	(cfs)
	ground water liner leakage from LO SP sumps	Q_gC4LOs_L =	0.0000	(cfs)
	ground water seepage from Overburden pond - PW1	Q_gOp1_L =	0.0189	(cfs)
	ground water seepage from Overburden pond - PW7	Q_gOp7_L =	-	(cfs)
	ground water leakage from Haul Road pond - PW2	Q_gHRp2_L =	0.0000	(cfs)
	ground water leakage from Haul Road pond - PW4	Q_gHRp4_L =	0.0000	(cfs)
	ground water leakage from RTH pond - PW3	Q_gRTHp_L =	0.0000	(cfs)
	ground water liner leakage from WWTF pond	Q_gWTFp_L =	0.0000	(cfs)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case	Year 20		
Parameter	Silver		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0001 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0001 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0001 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0001 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0001 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0001 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0001 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0001 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0001 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0001 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0006 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0006 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0006 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0006 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0006 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0006 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0006 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0006 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.0007 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.0007 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0007 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0007 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.0007 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	- (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.0007 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.0007 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.0007 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0007 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0007 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	- (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0006 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0006 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0006 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0008 (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M s1 =	- (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.00280 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.00340 (mg/s)
	mass flux of surface water into SW-002	M s2 =	- (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.00401 (mg/s)
	mass flux of surface water into SW-003	M s3 =	- (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.00158 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
Mass balance at each node	mass flux of surface water into SW-004	M s4 =	- (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.00473 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	- (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00000 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.02150 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	0.00012 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	- (mg/s)
	mass flux of ground water into SW-005	M g5 =	0.03533 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	- (mg/s)
mass flux of ground water into USGS Gage	M g6 =	0.00732 (mg/s)	
mass flux of surface water into Colby Lake	M scl =	- (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	0.01821 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.00110 (mg/s)	
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C r1 =	0.00019 (mg/L)
	concentration in river at SW-002	C r2 =	0.00025 (mg/L)
	concentration in river at SW-003	C r3 =	0.00027 (mg/L)
	concentration in river at SW-004	C r4 =	0.00030 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00040 (mg/L)
	concentration in river at SW-005	C r5 =	0.00046 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00047 (mg/L)
	concentration in Colby Lake (H)	C cl =	0.00015 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 20 Aluminum		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0700 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0700 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0700 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0700 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0700 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0700 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0700 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0700 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0700 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0173 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.1250 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.1250 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.1250 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.1250 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.1250 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.1250 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.1250 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.1250 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	1.6800 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	1.6800 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	1.6800 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	1.6800 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	83.0000 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.4106 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.1400 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	1.6800 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	1.6800 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	1.6800 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	1.6800 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	83.0000 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.4106 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.1250 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.1250 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.1250 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	0.5719 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	(mg/s)
	mass flux of ground water into SW-001	M g1 =	0.63675 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.48959 (mg/s)
	mass flux of surface water into SW-002	M s2 =	(mg/s)
	mass flux of ground water into SW-002	M g2 =	0.91193 (mg/s)
	mass flux of surface water into SW-003	M s3 =	(mg/s)
	mass flux of ground water into SW-003	M g3 =	0.35995 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep 003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3 003 =	0.00095 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO 003 =	0.00015 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s 003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	(mg/s)
	mass flux of ground water into SW-004	M g4 =	1.07480 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep 004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3 004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO 004 =	0.00015 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00011 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.01092 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.88859 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs 004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00011 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.21972 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00005 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00010 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00026 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M g4A =	4.88584 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	0.29442 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00004 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	0.18099 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	- (mg/s)
	mass flux of ground water into SW-005	M g5 =	8.03013 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	1.66263 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	4.13888 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.77259 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M r1 =	1.1263 (mg/s)
	mass flux in river at SW-002	M r2 =	2.0383 (mg/s)
	mass flux in river at SW-003	M r3 =	2.3993 (mg/s)
	mass flux in river at SW-004	M r4 =	4.5941 (mg/s)
	mass flux in river at SW-004A	M r4A =	9.5554 (mg/s)
	mass flux in river at SW-005	M r5 =	17.9856 (mg/s)
	mass flux in river at USGS Gage	M r6 =	19.6482 (mg/s)
mass flux into Colby Lake	M cl =	24.5596 (mg/s)	
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C r1 =	0.03373 (mg/L)
	concentration in river at SW-002	C r2 =	0.05009 (mg/L)
	concentration in river at SW-003	C r3 =	0.05467 (mg/L)
	concentration in river at SW-004	C r4 =	0.08278 (mg/L)
	concentration in river at SW-004A	C r4A =	0.10364 (mg/L)
	concentration in river at SW-005	C r5 =	0.11220 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.11318 (mg/L)
concentration in Colby Lake (H	C cl =	0.07622 (mg/L)	

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 20 Arsenic		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0021 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0021 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0021 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0021 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0021 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0021 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0021 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0021 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0021 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0065 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0022 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0022 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0022 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0022 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0022 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0022 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0022 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0022 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.4854 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.7073 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.7100 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.7100 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.2018 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0016 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.0027 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.4854 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.7073 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.7100 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.7100 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.2018 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0016 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0022 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0022 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0022 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.1278 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	- (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.01100 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.18395 (mg/s)
	mass flux of surface water into SW-002	M s2 =	- (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.01576 (mg/s)
	mass flux of surface water into SW-003	M s3 =	- (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.00622 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.00040 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00006 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	- (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.01857 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00006 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00005 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00003 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.00338 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.00083 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00006 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.08443 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	0.08506 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	0.00349 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	- (mg/s)
	mass flux of ground water into SW-005	M g5 =	0.13876 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.02873 (mg/s)
mass flux of surface water into Colby Lake	M scl =	- (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	0.07152 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.02329 (mg/s)	
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M r1 =	0.1950 (mg/s)
	mass flux in river at SW-002	M r2 =	0.2107 (mg/s)
	mass flux in river at SW-003	M r3 =	0.2174 (mg/s)
	mass flux in river at SW-004	M r4 =	0.2404 (mg/s)
	mass flux in river at SW-004A	M r4A =	0.4134 (mg/s)
	mass flux in river at SW-005	M r5 =	0.5521 (mg/s)
	mass flux in river at USGS Gage	M r6 =	0.5809 (mg/s)
mass flux into Colby Lake	M cl =	0.6757 (mg/s)	
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C r1 =	0.00584 (mg/L)
	concentration in river at SW-002	C r2 =	0.00518 (mg/L)
	concentration in river at SW-003	C r3 =	0.00495 (mg/L)
	concentration in river at SW-004	C r4 =	0.00433 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00430 (mg/L)
	concentration in river at SW-005	C r5 =	0.00344 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00335 (mg/L)
	concentration in Colby Lake (H)	C cl =	0.00225 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 20 Boron		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0450 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0450 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0450 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0450 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0450 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0450 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0450 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0450 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0450 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0960 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0870 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0870 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0870 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0870 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0870 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0870 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0870 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0870 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.7600 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.7600 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.7600 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.7600 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.7600 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0622 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.0370 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.7600 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.7600 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.7600 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.7600 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.7600 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0622 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0870 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0870 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0870 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	0.2524 (mg/L)
			Low Flow
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	(mg/s)
	mass flux of ground water into SW-001	M g1 =	0.44318 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	2.71680 (mg/s)
	mass flux of surface water into SW-002	M s2 =	(mg/s)
	mass flux of ground water into SW-002	M g2 =	0.63470 (mg/s)
	mass flux of surface water into SW-003	M s3 =	(mg/s)
	mass flux of ground water into SW-003	M g3 =	0.25053 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.00043 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00007 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	(mg/s)
	mass flux of ground water into SW-004	M g4 =	0.74806 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00007 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00005 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00010 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.13461 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.03328 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00003 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00007 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00012 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M g4A =	3.40055 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	0.13319 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00002 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	0.04783 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	- (mg/s)
	mass flux of ground water into SW-005	M g5 =	5.58897 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	1.15719 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	2.88066 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.49667 (mg/s)
			Low Flow
Mass balance at each node	mass flux in river at SW-001	M r1 =	3.1600 (mg/s)
	mass flux in river at SW-002	M r2 =	3.7947 (mg/s)
	mass flux in river at SW-003	M r3 =	4.0457 (mg/s)
	mass flux in river at SW-004	M r4 =	4.9621 (mg/s)
	mass flux in river at SW-004A	M r4A =	8.5437 (mg/s)
	mass flux in river at SW-005	M r5 =	14.1327 (mg/s)
	mass flux in river at USGS Gage	M r6 =	15.2898 (mg/s)
	mass flux into Colby Lake	M cl =	18.6672 (mg/s)
Convert mass flux to concentration	concentration in river at SW-001	C r1 =	0.09463 (mg/L)
	concentration in river at SW-002	C r2 =	0.09326 (mg/L)
	concentration in river at SW-003	C r3 =	0.09219 (mg/L)
	concentration in river at SW-004	C r4 =	0.08941 (mg/L)
	concentration in river at SW-004A	C r4A =	0.08895 (mg/L)
	concentration in river at SW-005	C r5 =	0.08817 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.08808 (mg/L)
	concentration in Colby Lake (H)	C cl =	0.05091 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 20 Barium		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0077 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0077 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0077 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0077 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0077 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0077 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0077 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0077 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0077 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0050 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0219 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0219 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0219 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0219 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0219 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0219 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0219 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0219 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.1900 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.1900 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.1900 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.1900 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.1900 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0168 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.0140 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.1900 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.1900 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.1900 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.1900 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.1900 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0168 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0219 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0219 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0219 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	0.0639 (mg/L)
			Low Flow
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	(mg/s)
	mass flux of ground water into SW-001	M g1 =	0.11166 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.14150 (mg/s)
	mass flux of surface water into SW-002	M s2 =	(mg/s)
	mass flux of ground water into SW-002	M g2 =	0.15992 (mg/s)
	mass flux of surface water into SW-003	M s3 =	(mg/s)
	mass flux of ground water into SW-003	M g3 =	0.06312 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep 003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3 003 =	0.00011 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO 003 =	0.00002 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s 003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	(mg/s)
	mass flux of ground water into SW-004	M g4 =	0.18848 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep 004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3 004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO 004 =	0.00002 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00001 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00002 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.03643 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs 004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.00901 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00001 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00002 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00003 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.85678 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	0.03330 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	0.01810 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	- (mg/s)
	mass flux of ground water into SW-005	M g5 =	1.40816 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.29156 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	0.72579 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.08476 (mg/s)
			Low Flow
Mass balance at each node	mass flux in river at SW-001	M r1 =	0.2532 (mg/s)
	mass flux in river at SW-002	M r2 =	0.4131 (mg/s)
	mass flux in river at SW-003	M r3 =	0.4763 (mg/s)
	mass flux in river at SW-004	M r4 =	0.7103 (mg/s)
	mass flux in river at SW-004A	M r4A =	1.6185 (mg/s)
	mass flux in river at SW-005	M r5 =	3.0267 (mg/s)
	mass flux in river at USGS Gage	M r6 =	3.3182 (mg/s)
mass flux into Colby Lake	M cl =	4.1288 (mg/s)	
Convert mass flux to concentration	concentration in river at SW-001	C r1 =	0.00758 (mg/L)
	concentration in river at SW-002	C r2 =	0.01015 (mg/L)
	concentration in river at SW-003	C r3 =	0.01085 (mg/L)
	concentration in river at SW-004	C r4 =	0.01280 (mg/L)
	concentration in river at SW-004A	C r4A =	0.01685 (mg/L)
	concentration in river at SW-005	C r5 =	0.01888 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.01911 (mg/L)
	concentration in Colby Lake (H)	C cl =	0.00932 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case	Year 20		
Parameter	Beryllium		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0001 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0001 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0001 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0001 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0001 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0001 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0001 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0001 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0001 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0001 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0001 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0001 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0001 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0001 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0001 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0001 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0001 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0001 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0002 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0002 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.0023 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	- (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.0002 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0002 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0023 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	- (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0001 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0001 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0001 (mg/L)
	concentration of liner leakage from WWTF pond	C gWTFp =	0.0003 (mg/L)

Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M s1 =	0.00074 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.00074 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.00283 (mg/s)
	mass flux of surface water into SW-002	M s2 =	- (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.00106 (mg/s)
	mass flux of surface water into SW-003	M s3 =	- (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.00042 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	- (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.00125 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	- (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00000 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.00567 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	0.00004 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	- (mg/s)
	mass flux of ground water into SW-005	M g5 =	0.00931 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	- (mg/s)
mass flux of ground water into USGS Gage	M g6 =	0.00193 (mg/s)	
mass flux of surface water into Colby Lake	M scl =	- (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	0.00480 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.00110 (mg/s)	

Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M r1 =	0.0036 (mg/s)
	mass flux in river at SW-002	M r2 =	0.0046 (mg/s)
	mass flux in river at SW-003	M r3 =	0.0050 (mg/s)
	mass flux in river at SW-004	M r4 =	0.0063 (mg/s)
	mass flux in river at SW-004A	M r4A =	0.0120 (mg/s)
	mass flux in river at SW-005	M r5 =	0.0213 (mg/s)
	mass flux in river at USGS Gage	M r6 =	0.0232 (mg/s)
mass flux into Colby Lake	M cl =	0.0291 (mg/s)	

Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C r1 =	0.00011 (mg/L)
	concentration in river at SW-002	C r2 =	0.00011 (mg/L)
	concentration in river at SW-003	C r3 =	0.00011 (mg/L)
	concentration in river at SW-004	C r4 =	0.00011 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00012 (mg/L)
	concentration in river at SW-005	C r5 =	0.00013 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00013 (mg/L)
	concentration in Colby Lake (H)	C cl =	0.00010 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case	Year 20			
Parameter	Calcium			
Input concentration data	concentration of surface water into SW-001	C s1 =	17.0000 (mg/L)	
	concentration of surface water into SW-002	C s2 =	17.0000 (mg/L)	
	concentration of surface water into SW-003	C s3 =	17.0000 (mg/L)	
	concentration of surface water into SW-004	C s4 =	17.0000 (mg/L)	
	concentration of surface water into SW-004A	C s4A =	17.0000 (mg/L)	
	concentration of surface water into SW-005	C s5 =	17.0000 (mg/L)	
	concentration of surface water into USGS Gage	C s6 =	17.0000 (mg/L)	
	concentration of surface water into Colby Lake	C scl =	17.0000 (mg/L)	
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	17.0000 (mg/L)	
	concentration of surface water discharges from upstream of PM-1	C sns =	24.5000 (mg/L)	
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)	
	concentration of ground water into SW-001	C g1 =	14.7900 (mg/L)	
	concentration of ground water into SW-002	C g2 =	14.7900 (mg/L)	
	concentration of ground water into SW-003	C g3 =	14.7900 (mg/L)	
	concentration of ground water into SW-004	C g4 =	14.7900 (mg/L)	
	concentration of ground water into SW-004A	C g4A =	14.7900 (mg/L)	
	concentration of ground water into SW-005	C g5 =	14.7900 (mg/L)	
	concentration of ground water into USGS Gage	C g6 =	14.7900 (mg/L)	
	concentration of ground water into Colby Lake	C gcl =	14.7900 (mg/L)	
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)	
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)	
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	540.0000 (mg/L)	
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	540.0000 (mg/L)	
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	540.0000 (mg/L)	
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	540.0000 (mg/L)	
	concentration of liner leakage from LOSP	C gC4LO =	480.0000 (mg/L)	
	concentration of seepage from Overburden (Storage)	C gOS =	9.3700 (mg/L)	
	concentration of seepage from Overburden (Cat 1)	C gO12 =	15.8000 (mg/L)	
	concentration of liner leakage from Cat 1 sumps	C gC12s =	540.0000 (mg/L)	
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	540.0000 (mg/L)	
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	540.0000 (mg/L)	
	concentration of liner leakage from Cat 4 sumps	C gC4s =	540.0000 (mg/L)	
	concentration of liner leakage from LOSP sumps	C gC4LOs =	480.0000 (mg/L)	
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	9.3700 (mg/L)	
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)	
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	14.7900 (mg/L)	
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	14.7900 (mg/L)	
	concentration of leakage from RTH Pond - PW3	C gRTHp =	14.7900 (mg/L)	
	concentration of liner leakage from WWTF ponc	C_gWTFp =	149.6535 (mg/L)	
	Convert concentration to mass flux	Low Flow		
		mass flux of surface water into SW-001	M s1 =	(mg/s)
		mass flux of ground water into SW-001	M g1 =	75.34026 (mg/s)
		mass flux of surface discharges from upstream of PM-1	M sns =	693.35000 (mg/s)
mass flux of surface water into SW-002		M s2 =	(mg/s)	
mass flux of ground water into SW-002		M g2 =	107.89920 (mg/s)	
mass flux of surface water into SW-003		M s3 =	(mg/s)	
mass flux of ground water into SW-003		M g3 =	42.58957 (mg/s)	
mass flux of seepage from East Pit to SW-003		M gep_003 =	#N/A (mg/s)	
mass flux of liner leakage from Cat 2/3 stockpile to SW-003		M gC3_003 =	0.30659 (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-003		M gC3LO_003 =	0.04900 (mg/s)	
mass flux of liner leakage from Cat 2/3 sumps to SW-003		M gC3s_003 =	0.00044 (mg/s)	
mass flux of surface water into SW-004		M s4 =	(mg/s)	
mass flux of ground water into SW-004		M g4 =	127.16988 (mg/s)	
mass flux of seepage from East Pit to SW-004		M gep_004 =	#N/A (mg/s)	
mass flux of seepage from West Pit		M gwp =	#N/A (mg/s)	
mass flux of liner leakage from Cat 2/3 stockpile to SW-004		M gC3_004 =	- (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-004		M gC3LO_004 =	0.04900 (mg/s)	
mass flux of liner leakage from Cat 4 stockpile		M gC4 =	0.03590 (mg/s)	
mass flux of liner leakage from LOSP		M gC4LO =	0.06315 (mg/s)	
mass flux of seepage from Overburden (Storage)		M gOS =	20.27794 (mg/s)	
mass flux of liner leakage from Cat 3LO sumps to SW-004		M gC3LOs_004 =	0.00042 (mg/s)	
mass flux of liner leakage from Cat 4 sumps		M gC4s =	0.00038 (mg/s)	
mass flux of liner leakage from LOSP sumps		M gC4LOs =	0.00064 (mg/s)	
mass flux of seepage from Overburden Ponds - PW1		M gOp1 =	5.01400 (mg/s)	
mass flux of leakage from Haul Road Pond - PW2		M gHRp2 =	0.00563 (mg/s)	
mass flux of leakage from Haul Road Pond - PW4		M gHRp4 =	0.01206 (mg/s)	
mass flux of leakage from RTH Pond - PW3		M gRTHp =	0.00000 (mg/s)	
mass flux of liner leakage from WWTF pond		M gWTFp =	0.06879 (mg/s)	
mass flux of surface water into SW-004A		M s4A =	- (mg/s)	
mass flux of ground water into SW-004A		M g4A =	578.09279 (mg/s)	
mass flux of West Pit overflow		M sms =	#N/A (mg/s)	
mass flux of liner leakage from Cat 1 stockpile		M gC12 =	94.63370 (mg/s)	
mass flux of liner leakage from Cat 1 sumps		M gC12s =	0.01183 (mg/s)	
mass flux of seepage from Overburden (Cat 1)		M gO12 =	20.42604 (mg/s)	
mass flux of seepage from Overburden Pond - PW7		M gOp7 =	#N/A (mg/s)	
mass flux of surface water into SW-005		M s5 =	- (mg/s)	
mass flux of ground water into SW-005		M g5 =	950.12439 (mg/s)	
mass flux of surface water into USGS Gage		M s6 =	- (mg/s)	
mass flux of ground water into USGS Gage		M g6 =	196.72179 (mg/s)	
mass flux of surface water into Colby Lake		M scl =	- (mg/s)	
mass flux of ground water into Colby Lake		M gcl =	489.71169 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP		M shl =	187.62900 (mg/s)	
Mass balance at each node	Low Flow			
	mass flux in river at SW-001	M r1 =	768.6903 (mg/s)	
	mass flux in river at SW-002	M r2 =	876.5895 (mg/s)	
	mass flux in river at SW-003	M r3 =	919.5351 (mg/s)	
	mass flux in river at SW-004	M r4 =	1,072.2333 (mg/s)	
	mass flux in river at SW-004A	M r4A =	1,765.3976 (mg/s)	
	mass flux in river at SW-005	M r5 =	2,715.5220 (mg/s)	
	mass flux in river at USGS Gage	M r6 =	2,912.2438 (mg/s)	
mass flux into Colby Lake	M cl =	3,589.5845 (mg/s)		
Convert mass flux to concentration	Low Flow			
	concentration in river at SW-001	C r1 =	23.01881 (mg/L)	
	concentration in river at SW-002	C r2 =	21.54343 (mg/L)	
	concentration in river at SW-003	C r3 =	20.95317 (mg/L)	
	concentration in river at SW-004	C r4 =	19.31940 (mg/L)	
	concentration in river at SW-004A	C r4A =	18.37900 (mg/L)	
	concentration in river at SW-005	C r5 =	16.94066 (mg/L)	
	concentration in river at USGS Gage	C r6 =	16.77587 (mg/L)	
	concentration in Colby Lake (H	C cl =	16.92514 (mg/L)	

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case		Year 20	
Parameter		Cadmium	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0001 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0001 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0001 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0001 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0001 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0001 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0001 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0001 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0001 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0001 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0001 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0001 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0001 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0001 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0001 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0001 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0001 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0001 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0002 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0002 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0149 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0001 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0002 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0002 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0149 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0001 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0001 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0001 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0001 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0002 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00051 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.00283 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.00073 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00029 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.00086 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00013 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00003 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00000 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.00391 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.00003 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.00642 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.00133 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.00331 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00110 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	0.0033 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.0041 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.0044 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.0054 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.0093 (mg/s)
	mass flux in river at SW-005	M_r5 =	0.0157 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	0.0171 (mg/s)
	mass flux into Colby Lake	M_cl =	0.0215 (mg/s)
	Low Flow		
	concentration in river at SW-001	C_r1 =	0.00010 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00010 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00010 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00010 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00010 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00010 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00010 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.00010 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 20 Chloride		
Input concentration data	concentration of surface water into SW-001	C s1 =	8.0000 (mg/L)
	concentration of surface water into SW-002	C s2 =	8.0000 (mg/L)
	concentration of surface water into SW-003	C s3 =	8.0000 (mg/L)
	concentration of surface water into SW-004	C s4 =	8.0000 (mg/L)
	concentration of surface water into SW-004A	C s4A =	8.0000 (mg/L)
	concentration of surface water into SW-005	C s5 =	8.0000 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	8.0000 (mg/L)
	concentration of surface water into Colby Lake	C scl =	8.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	8.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	1.6000 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	6.6000 (mg/L)
	concentration of ground water into SW-002	C g2 =	6.6000 (mg/L)
	concentration of ground water into SW-003	C g3 =	6.6000 (mg/L)
	concentration of ground water into SW-004	C g4 =	6.6000 (mg/L)
	concentration of ground water into SW-004A	C g4A =	6.6000 (mg/L)
	concentration of ground water into SW-005	C g5 =	6.6000 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	6.6000 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	6.6000 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	- (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	210.9465 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	213.4889 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	1.3263 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	2.7608 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	5.3500 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	2.3300 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	(mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	210.9465 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	213.4889 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	1.3263 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	2.7608 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	5.3500 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	6.6000 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	6.6000 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	6.6000 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	0.9851 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	(mg/s)
	mass flux of ground water into SW-001	M g1 =	33.62040 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	45.28000 (mg/s)
	mass flux of surface water into SW-002	M s2 =	(mg/s)
	mass flux of ground water into SW-002	M g2 =	48.14975 (mg/s)
	mass flux of surface water into SW-003	M s3 =	(mg/s)
	mass flux of ground water into SW-003	M g3 =	19.00549 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.11977 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.01937 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00017 (mg/s)
	mass flux of surface water into SW-004	M s4 =	(mg/s)
	mass flux of ground water into SW-004	M g4 =	56.74924 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.01937 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00009 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00036 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	11.57812 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00016 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	2.86285 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00251 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00538 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00045 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M g4A =	257.97244 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	- (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	3.01219 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	- (mg/s)
	mass flux of ground water into SW-005	M g5 =	423.99060 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	87.78660 (mg/s)
mass flux of surface water into Colby Lake	M scl =	- (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	218.53260 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	88.29600 (mg/s)	
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M r1 =	78.9004 (mg/s)
	mass flux in river at SW-002	M r2 =	127.0501 (mg/s)
	mass flux in river at SW-003	M r3 =	146.1949 (mg/s)
	mass flux in river at SW-004	M r4 =	217.4137 (mg/s)
	mass flux in river at SW-004A	M r4A =	478.3983 (mg/s)
	mass flux in river at SW-005	M r5 =	902.3889 (mg/s)
	mass flux in river at USGS Gage	M r6 =	990.1755 (mg/s)
mass flux into Colby Lake	M cl =	1,297.0041 (mg/s)	
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C r1 =	2.36271 (mg/L)
	concentration in river at SW-002	C r2 =	3.12244 (mg/L)
	concentration in river at SW-003	C r3 =	3.33130 (mg/L)
	concentration in river at SW-004	C r4 =	3.91734 (mg/L)
	concentration in river at SW-004A	C r4A =	4.98045 (mg/L)
	concentration in river at SW-005	C r5 =	5.62951 (mg/L)
	concentration in river at USGS Gage	C r6 =	5.70387 (mg/L)
	concentration in Colby Lake (H)	C cl =	7.70270 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 20 Cobalt		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0005 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0005 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0005 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0005 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0005 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0005 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0005 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0005 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0005 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0005 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0017 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0017 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0017 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0017 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0017 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0017 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0017 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0017 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.0520 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.0520 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0520 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0520 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	11.1379 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0011 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.0013 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.0520 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.0520 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.0520 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0520 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	11.1379 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0011 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0017 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0017 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0017 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	0.0312 (mg/L)
		Low Flow	
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	(mg/s)
	mass flux of ground water into SW-001	M g1 =	0.00841 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.01415 (mg/s)
	mass flux of surface water into SW-002	M s2 =	(mg/s)
	mass flux of ground water into SW-002	M g2 =	0.01204 (mg/s)
	mass flux of surface water into SW-003	M s3 =	(mg/s)
	mass flux of ground water into SW-003	M g3 =	0.00475 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.00003 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	(mg/s)
	mass flux of ground water into SW-004	M g4 =	0.01419 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00147 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.00240 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00001 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.00059 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00001 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.06449 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	0.00911 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	0.00168 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	- (mg/s)
	mass flux of ground water into SW-005	M g5 =	0.10600 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.02195 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	0.05463 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.00552 (mg/s)
		Low Flow	
Mass balance at each node	mass flux in river at SW-001	M r1 =	0.0226 (mg/s)
	mass flux in river at SW-002	M r2 =	0.0346 (mg/s)
	mass flux in river at SW-003	M r3 =	0.0394 (mg/s)
	mass flux in river at SW-004	M r4 =	0.0581 (mg/s)
	mass flux in river at SW-004A	M r4A =	0.1334 (mg/s)
	mass flux in river at SW-005	M r5 =	0.2394 (mg/s)
	mass flux in river at USGS Gage	M r6 =	0.2613 (mg/s)
	mass flux into Colby Lake	M cl =	0.3215 (mg/s)
Convert mass flux to concentration	concentration in river at SW-001	C r1 =	0.00068 (mg/L)
	concentration in river at SW-002	C r2 =	0.00085 (mg/L)
	concentration in river at SW-003	C r3 =	0.00090 (mg/L)
	concentration in river at SW-004	C r4 =	0.00105 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00139 (mg/L)
	concentration in river at SW-005	C r5 =	0.00149 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00151 (mg/L)
	concentration in Colby Lake (H	C cl =	0.00064 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 20 Copper		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0017 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0017 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0017 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0017 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0017 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0017 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0017 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0017 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0190 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0012 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0030 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0030 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0030 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0030 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0030 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0030 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0030 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0030 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0920 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0920 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0920 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0920 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	2.6824 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0214 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.0170 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0920 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0920 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0920 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0920 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	2.6824 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0214 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0030 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0030 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0030 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.1862 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.01503 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.03509 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.02152 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00849 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00005 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.02537 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00001 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00035 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.04840 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.01147 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00009 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.11531 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.01612 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.02198 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.18951 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.03924 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.09768 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.20970 (mg/s)
Mass balance at each node	mass flux in river at SW-001	M_r1 =	0.0501 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.0716 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.0802 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.1639 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.3173 (mg/s)
	mass flux in river at SW-005	M_r5 =	0.5068 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	0.5461 (mg/s)
	mass flux into Colby Lake	M_cl =	0.8534 (mg/s)
Convert mass flux to concentration	concentration in river at SW-001	C_r1 =	0.00150 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00176 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00183 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00295 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00330 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00316 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00315 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.00202 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 20 Fluoride		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0700 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0700 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0700 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0700 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0700 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0700 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0700 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0700 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0700 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.1400 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.2800 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.2800 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.2800 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.2800 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.2800 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.2800 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.2800 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.2800 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.0621 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.0621 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0621 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0621 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.0622 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.2239 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.4200 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.0621 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.0621 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.0621 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0621 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0622 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.2239 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.2800 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.2800 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.2800 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.2112 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	(mg/s)
	mass flux of ground water into SW-001	M g1 =	1.42632 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	3.96200 (mg/s)
	mass flux of surface water into SW-002	M s2 =	(mg/s)
	mass flux of ground water into SW-002	M g2 =	2.04272 (mg/s)
	mass flux of surface water into SW-003	M s3 =	(mg/s)
	mass flux of ground water into SW-003	M g3 =	0.80629 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.00004 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	(mg/s)
	mass flux of ground water into SW-004	M g4 =	2.40754 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.48453 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.11981 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00011 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00023 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00010 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M g4A =	10.94429 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	0.01088 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	0.54297 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	- (mg/s)
	mass flux of ground water into SW-005	M g5 =	17.98748 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	3.72428 (mg/s)
mass flux of surface water into Colby Lake	M scl =	- (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	9.27108 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.77259 (mg/s)	
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M r1 =	5.3883 (mg/s)
	mass flux in river at SW-002	M r2 =	7.4310 (mg/s)
	mass flux in river at SW-003	M r3 =	8.2374 (mg/s)
	mass flux in river at SW-004	M r4 =	11.2497 (mg/s)
	mass flux in river at SW-004A	M r4A =	22.7478 (mg/s)
	mass flux in river at SW-005	M r5 =	40.7353 (mg/s)
	mass flux in river at USGS Gage	M r6 =	44.4596 (mg/s)
mass flux into Colby Lake	M cl =	54.5033 (mg/s)	
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C r1 =	0.16136 (mg/L)
	concentration in river at SW-002	C r2 =	0.18263 (mg/L)
	concentration in river at SW-003	C r3 =	0.18770 (mg/L)
	concentration in river at SW-004	C r4 =	0.20270 (mg/L)
	concentration in river at SW-004A	C r4A =	0.23682 (mg/L)
	concentration in river at SW-005	C r5 =	0.25413 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.25611 (mg/L)
concentration in Colby Lake (H)	C cl =	0.09621 (mg/L)	

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case		Year 20	
Parameter		Iron	
Input concentration data	concentration of surface water into SW-001	C_s1 =	1.6000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	1.6000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	1.6000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	1.6000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	1.6000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	1.6000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	1.6000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	1.6000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	1.6000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0300 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	2.8440 (mg/L)
	concentration of ground water into SW-002	C_g2 =	2.8440 (mg/L)
	concentration of ground water into SW-003	C_g3 =	2.8440 (mg/L)
	concentration of ground water into SW-004	C_g4 =	2.8440 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	2.8440 (mg/L)
	concentration of ground water into SW-005	C_g5 =	2.8440 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	2.8440 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	2.8440 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.8100 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.8100 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.8100 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.8100 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	235.0000 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.2255 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.1500 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.8100 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.8100 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.8100 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.8100 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	235.0000 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.2255 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	2.8440 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	2.8440 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	2.8440 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.3790 (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	14.48734 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.84900 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	20.74816 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	8.18964 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00046 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00007 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	24.45376 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00007 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00005 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.03092 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.48801 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00031 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.12067 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00108 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00232 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00017 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	111.16267 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.14195 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00002 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.19392 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	182.70140 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	37.82804 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	94.16768 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	17.65920 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	15.3363 (mg/s)
	mass flux in river at SW-002	M_r2 =	36.0845 (mg/s)
	mass flux in river at SW-003	M_r3 =	44.2747 (mg/s)
	mass flux in river at SW-004	M_r4 =	69.3720 (mg/s)
	mass flux in river at SW-004A	M_r4A =	180.8706 (mg/s)
	mass flux in river at SW-005	M_r5 =	363.5720 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	401.4001 (mg/s)
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C_r1 =	0.45925 (mg/L)
	concentration in river at SW-002	C_r2 =	0.88683 (mg/L)
	concentration in river at SW-003	C_r3 =	1.00887 (mg/L)
	concentration in river at SW-004	C_r4 =	1.24994 (mg/L)
	concentration in river at SW-004A	C_r4A =	1.88299 (mg/L)
	concentration in river at SW-005	C_r5 =	2.26813 (mg/L)
	concentration in river at USGS Gage	C_r6 =	2.31225 (mg/L)
	concentration in Colby Lake (H)	C_cl =	1.70964 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 20 Hardness		
Input concentration data	concentration of surface water into SW-001	C s1 =	110.0000 (mg/L)
	concentration of surface water into SW-002	C s2 =	110.0000 (mg/L)
	concentration of surface water into SW-003	C s3 =	110.0000 (mg/L)
	concentration of surface water into SW-004	C s4 =	110.0000 (mg/L)
	concentration of surface water into SW-004A	C s4A =	110.0000 (mg/L)
	concentration of surface water into SW-005	C s5 =	110.0000 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	110.0000 (mg/L)
	concentration of surface water into Colby Lake	C scl =	110.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	110.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	110.0000 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	66.4200 (mg/L)
	concentration of ground water into SW-002	C g2 =	66.4200 (mg/L)
	concentration of ground water into SW-003	C g3 =	66.4200 (mg/L)
	concentration of ground water into SW-004	C g4 =	66.4200 (mg/L)
	concentration of ground water into SW-004A	C g4A =	66.4200 (mg/L)
	concentration of ground water into SW-005	C g5 =	66.4200 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	66.4200 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	66.4200 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	1,729.3495 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	1,729.3495 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	1,729.3495 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	1,729.3495 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	5,435.6906 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	43.5200 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	71.5000 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	1,729.3495 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	1,729.3495 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	1,729.3495 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	1,729.3495 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	5,435.6906 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	43.5200 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	66.4200 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	66.4200 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	66.4200 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	493.7911 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	(mg/s)
	mass flux of ground water into SW-001	M g1 =	338.34348 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	3,113.00000 (mg/s)
	mass flux of surface water into SW-002	M s2 =	(mg/s)
	mass flux of ground water into SW-002	M g2 =	484.56154 (mg/s)
	mass flux of surface water into SW-003	M s3 =	(mg/s)
	mass flux of ground water into SW-003	M g3 =	191.26430 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.98184 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.15692 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00139 (mg/s)
	mass flux of surface water into SW-004	M s4 =	(mg/s)
	mass flux of ground water into SW-004	M g4 =	571.10370 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.15692 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.11497 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.71515 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	94.18314 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00133 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00121 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00724 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	23.28806 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.02527 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.05414 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00002 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.22696 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M g4A =	2,596.14083 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	303.06434 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.03789 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	92.43429 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	- (mg/s)
	mass flux of ground water into SW-005	M g5 =	4,266.88722 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	883.45242 (mg/s)
mass flux of surface water into Colby Lake	M scl =	- (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	2,199.23262 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	1,214.07000 (mg/s)	
Mass balance at each node			Low Flow
	mass flux in river at SW-001	M r1 =	3,451.3435 (mg/s)
	mass flux in river at SW-002	M r2 =	3,935.9050 (mg/s)
	mass flux in river at SW-003	M r3 =	4,128.3095 (mg/s)
	mass flux in river at SW-004	M r4 =	4,818.1890 (mg/s)
	mass flux in river at SW-004A	M r4A =	7,809.8663 (mg/s)
	mass flux in river at SW-005	M r5 =	12,076.7536 (mg/s)
mass flux in river at USGS Gage	M r6 =	12,960.2060 (mg/s)	
mass flux into Colby Lake	M cl =	16,373.5086 (mg/s)	
Convert mass flux to concentration			Low Flow
	concentration in river at SW-001	C r1 =	103.35220 (mg/L)
	concentration in river at SW-002	C r2 =	96.73044 (mg/L)
	concentration in river at SW-003	C r3 =	94.07057 (mg/L)
	concentration in river at SW-004	C r4 =	86.81367 (mg/L)
	concentration in river at SW-004A	C r4A =	81.30608 (mg/L)
	concentration in river at SW-005	C r5 =	75.34027 (mg/L)
concentration in river at USGS Gage	C r6 =	74.65680 (mg/L)	
concentration in Colby Lake (H)	C cl =	104.94452 (mg/L)	

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case		Year 20	
Parameter	Potassium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	1.3000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	1.3000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	1.3000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	1.3000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	1.3000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	1.3000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	1.3000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	1.3000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	1.3000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	2.7000 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	1.7500 (mg/L)
	concentration of ground water into SW-002	C_g2 =	1.7500 (mg/L)
	concentration of ground water into SW-003	C_g3 =	1.7500 (mg/L)
	concentration of ground water into SW-004	C_g4 =	1.7500 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	1.7500 (mg/L)
	concentration of ground water into SW-005	C_g5 =	1.7500 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	1.7500 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	1.7500 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	49.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	49.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	49.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	49.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	38.0000 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	2.2600 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	4.4500 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	49.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	49.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	49.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	49.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	38.0000 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	2.2600 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	1.7500 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	1.7500 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	1.7500 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	13.6661 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	8.91450 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	76.41000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	12.76698 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	5.03933 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.02782 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00445 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00004 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	15.04715 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00445 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00326 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00500 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	4.89094 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00004 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00003 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00005 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	1.20935 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00067 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00143 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00628 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	68.40178 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	8.58713 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00107 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	5.75290 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	112.42175 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	23.27675 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	57.94425 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	14.34810 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	85.3245 (mg/s)
	mass flux in river at SW-002	M_r2 =	98.0915 (mg/s)
	mass flux in river at SW-003	M_r3 =	103.1631 (mg/s)
	mass flux in river at SW-004	M_r4 =	124.3318 (mg/s)
	mass flux in river at SW-004A	M_r4A =	207.0747 (mg/s)
	mass flux in river at SW-005	M_r5 =	319.4964 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	342.7732 (mg/s)
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C_r1 =	2.55508 (mg/L)
	concentration in river at SW-002	C_r2 =	2.41074 (mg/L)
	concentration in river at SW-003	C_r3 =	2.35075 (mg/L)
	concentration in river at SW-004	C_r4 =	2.24020 (mg/L)
	concentration in river at SW-004A	C_r4A =	2.15579 (mg/L)
	concentration in river at SW-005	C_r5 =	1.99316 (mg/L)
	concentration in river at USGS Gage	C_r6 =	1.97453 (mg/L)
	concentration in Colby Lake (H)	C_cl =	1.38840 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case		Year 20	
Parameter	Magnesium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	8.0000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	8.0000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	8.0000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	8.0000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	8.0000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	8.0000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	8.0000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	8.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	8.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	10.5000 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	8.0200 (mg/L)
	concentration of ground water into SW-002	C_g2 =	8.0200 (mg/L)
	concentration of ground water into SW-003	C_g3 =	8.0200 (mg/L)
	concentration of ground water into SW-004	C_g4 =	8.0200 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	8.0200 (mg/L)
	concentration of ground water into SW-005	C_g5 =	8.0200 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	8.0200 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	8.0200 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	93.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	93.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	93.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	93.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	1,030.0000 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	4.8800 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	9.0100 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	93.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	93.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	93.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	93.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	1,030.0000 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	4.8800 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of seepage from Haul Road Pond - PW2	C_gHRp2 =	8.0200 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	8.0200 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	8.0200 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	29.3035 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	40.85388 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	297.15000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	58.50924 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	23.09455 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.05280 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00844 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00007 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	68.95892 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00844 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00618 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.13551 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	10.56098 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00007 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00007 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00137 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	2.61135 (mg/s)
	mass flux of seepage from Haul Road Pond - PW2	M_gHRp2 =	0.00305 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00654 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.01347 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	313.47560 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	16.29803 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00204 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	11.64801 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	515.21282 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	106.67402 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	265.55022 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	88.29600 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	338.0039 (mg/s)
	mass flux in river at SW-002	M_r2 =	396.5131 (mg/s)
	mass flux in river at SW-003	M_r3 =	419.8690 (mg/s)
	mass flux in river at SW-004	M_r4 =	501.9750 (mg/s)
	mass flux in river at SW-004A	M_r4A =	843.3987 (mg/s)
	mass flux in river at SW-005	M_r5 =	1,358.6115 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	1,465.2855 (mg/s)
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C_r1 =	10.12169 (mg/L)
	concentration in river at SW-002	C_r2 =	9.74487 (mg/L)
	concentration in river at SW-003	C_r3 =	9.56287 (mg/L)
	concentration in river at SW-004	C_r4 =	9.04454 (mg/L)
	concentration in river at SW-004A	C_r4A =	8.78036 (mg/L)
	concentration in river at SW-005	C_r5 =	8.47563 (mg/L)
	concentration in river at USGS Gage	C_r6 =	8.44072 (mg/L)
	concentration in Colby Lake (H)	C_cl =	8.05157 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case	Year 20		
Parameter	Manganese		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.1500 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.1500 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.1500 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.1500 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.1500 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.1500 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.1500 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.1500 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.1500 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0086 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.1240 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.1240 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.1240 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.1240 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.1240 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.1240 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.1240 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.1240 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.7500 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.7500 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.7500 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.7500 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	28.5073 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.1604 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.1160 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.7500 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.7500 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_g3LOs =	0.7500 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.7500 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	28.5073 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.1604 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.1240 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.1240 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.1240 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	0.2423 (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M_s1 =	(mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.63166 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.24338 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	(mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.90463 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	(mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.35707 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00043 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00007 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	(mg/s)
	mass flux of ground water into SW-004	M_g4 =	1.06620 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00007 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00005 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00375 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.34711 (mg/s)
mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)	
mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)	
mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00004 (mg/s)	
mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.08583 (mg/s)	
mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00005 (mg/s)	
mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00010 (mg/s)	
mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)	
mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00011 (mg/s)	
mass flux of surface water into SW-004A	M_s4A =	- (mg/s)	
mass flux of ground water into SW-004A	M_g4A =	4.84675 (mg/s)	
mass flux of West Pit overflow	M_sms =	#N/A (mg/s)	
mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.13144 (mg/s)	
mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00002 (mg/s)	
mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.14996 (mg/s)	
mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)	
mass flux of surface water into SW-005	M_s5 =	- (mg/s)	
mass flux of ground water into SW-005	M_g5 =	7.96588 (mg/s)	
mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)	
mass flux of ground water into USGS Gage	M_g6 =	1.64932 (mg/s)	
mass flux of surface water into Colby Lake	M_scl =	- (mg/s)	
mass flux of ground water into Colby Lake	M_gcl =	4.10576 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M_shl =	1.65555 (mg/s)	
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	0.8750 (mg/s)
	mass flux in river at SW-002	M_r2 =	1.7797 (mg/s)
	mass flux in river at SW-003	M_r3 =	2.1372 (mg/s)
	mass flux in river at SW-004	M_r4 =	3.6405 (mg/s)
	mass flux in river at SW-004A	M_r4A =	8.7687 (mg/s)
	mass flux in river at SW-005	M_r5 =	16.7346 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	18.3839 (mg/s)
mass flux into Colby Lake	M_cl =	24.1452 (mg/s)	
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C_r1 =	0.02620 (mg/L)
	concentration in river at SW-002	C_r2 =	0.04374 (mg/L)
	concentration in river at SW-003	C_r3 =	0.04870 (mg/L)
	concentration in river at SW-004	C_r4 =	0.06559 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.09129 (mg/L)
	concentration in river at SW-005	C_r5 =	0.10440 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.10590 (mg/L)
	concentration in Colby Lake (H	C_cl =	0.14432 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 20 Sodium		
Input concentration data	concentration of surface water into SW-001	C s1 =	2.5000 (mg/L)
	concentration of surface water into SW-002	C s2 =	2.5000 (mg/L)
	concentration of surface water into SW-003	C s3 =	2.5000 (mg/L)
	concentration of surface water into SW-004	C s4 =	2.5000 (mg/L)
	concentration of surface water into SW-004A	C s4A =	2.5000 (mg/L)
	concentration of surface water into SW-005	C s5 =	2.5000 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	2.5000 (mg/L)
	concentration of surface water into Colby Lake	C scl =	2.5000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	2.5000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	4.8000 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	13.3300 (mg/L)
	concentration of ground water into SW-002	C g2 =	13.3300 (mg/L)
	concentration of ground water into SW-003	C g3 =	13.3300 (mg/L)
	concentration of ground water into SW-004	C g4 =	13.3300 (mg/L)
	concentration of ground water into SW-004A	C g4A =	13.3300 (mg/L)
	concentration of ground water into SW-005	C g5 =	13.3300 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	13.3300 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	13.3300 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	681.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	681.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	681.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	681.0000 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	174.1720 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	4.6000 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	7.1900 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	681.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	681.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	681.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	681.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	174.1720 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	4.6000 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	13.3300 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	13.3300 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	13.3300 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	172.9501 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	- (mg/s)
	mass flux of ground water into SW-001	M g1 =	67.90302 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	135.84000 (mg/s)
	mass flux of surface water into SW-002	M s2 =	- (mg/s)
	mass flux of ground water into SW-002	M g2 =	97.24790 (mg/s)
	mass flux of surface water into SW-003	M s3 =	- (mg/s)
	mass flux of ground water into SW-003	M g3 =	38.38532 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.38664 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.06179 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00055 (mg/s)
	mass flux of surface water into SW-004	M s4 =	- (mg/s)
	mass flux of ground water into SW-004	M g4 =	114.61626 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.06179 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.04527 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.02291 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	9.95502 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00053 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00048 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00023 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	2.46151 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00507 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.01087 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.07949 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M g4A =	521.02615 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	119.34362 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.01492 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	9.29514 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	- (mg/s)
	mass flux of ground water into SW-005	M g5 =	856.33253 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	177.30233 (mg/s)
mass flux of surface water into Colby Lake	M scl =	- (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	441.36963 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	27.59250 (mg/s)	
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M r1 =	203.7430 (mg/s)
	mass flux in river at SW-002	M r2 =	300.9909 (mg/s)
	mass flux in river at SW-003	M r3 =	339.8252 (mg/s)
	mass flux in river at SW-004	M r4 =	467.0852 (mg/s)
	mass flux in river at SW-004A	M r4A =	1,116.7650 (mg/s)
	mass flux in river at SW-005	M r5 =	1,973.0976 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M r6 =	2,150.3999 (mg/s)
	mass flux into Colby Lake	M cl =	2,619.3620 (mg/s)
	Low Flow		
	concentration in river at SW-001	C r1 =	6.10119 (mg/L)
	concentration in river at SW-002	C r2 =	7.39728 (mg/L)
	concentration in river at SW-003	C r3 =	7.74350 (mg/L)
	concentration in river at SW-004	C r4 =	8.41590 (mg/L)
	concentration in river at SW-004A	C r4A =	11.62629 (mg/L)
	concentration in river at SW-005	C r5 =	12.30908 (mg/L)
	concentration in river at USGS Gage	C r6 =	12.38730 (mg/L)
	concentration in Colby Lake (H)	C cl =	3.88338 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 20 Nickel		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0016 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0016 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0016 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0016 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0016 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0016 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0016 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0016 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0033 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0016 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0163 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0163 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0163 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0163 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0163 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0163 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0163 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0163 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.4787 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.6976 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.8600 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.8600 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	144.3006 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0080 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.0190 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.4787 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.6976 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.8600 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.8600 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4Os =	144.3006 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0080 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0163 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0163 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0163 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	0.3548 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	(mg/s)
	mass flux of ground water into SW-001	M g1 =	0.08293 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.04387 (mg/s)
	mass flux of surface water into SW-002	M s2 =	(mg/s)
	mass flux of ground water into SW-002	M g2 =	0.11877 (mg/s)
	mass flux of surface water into SW-003	M s3 =	(mg/s)
	mass flux of ground water into SW-003	M g3 =	0.04688 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep 003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3 003 =	0.00040 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO 003 =	0.00008 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s 003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	(mg/s)
	mass flux of ground water into SW-004	M g4 =	0.13998 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep 004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3 004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO 004 =	0.00008 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00006 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.01898 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.01725 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs 004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4Os =	0.00019 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.00426 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00001 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00001 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00016 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.63633 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	0.08390 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	0.02456 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	- (mg/s)
	mass flux of ground water into SW-005	M g5 =	1.04584 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.21654 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	0.53905 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.03642 (mg/s)
Mass balance at each node	mass flux in river at SW-001	M r1 =	0.1268 (mg/s)
	mass flux in river at SW-002	M r2 =	0.2456 (mg/s)
	mass flux in river at SW-003	M r3 =	0.2929 (mg/s)
	mass flux in river at SW-004	M r4 =	0.4739 (mg/s)
	mass flux in river at SW-004A	M r4A =	1.2187 (mg/s)
	mass flux in river at SW-005	M r5 =	2.2646 (mg/s)
	mass flux in river at USGS Gage	M r6 =	2.4811 (mg/s)
	mass flux into Colby Lake	M cl =	3.0566 (mg/s)
Convert mass flux to concentration	concentration in river at SW-001	C r1 =	0.00380 (mg/L)
	concentration in river at SW-002	C r2 =	0.00604 (mg/L)
	concentration in river at SW-003	C r3 =	0.00667 (mg/L)
	concentration in river at SW-004	C r4 =	0.00854 (mg/L)
	concentration in river at SW-004A	C r4A =	0.01269 (mg/L)
	concentration in river at SW-005	C r5 =	0.01413 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.01429 (mg/L)
	concentration in Colby Lake (H	C cl =	0.00337 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 20 Lead			
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0005 (mg/L)	
	concentration of surface water into SW-002	C s2 =	0.0005 (mg/L)	
	concentration of surface water into SW-003	C s3 =	0.0005 (mg/L)	
	concentration of surface water into SW-004	C s4 =	0.0005 (mg/L)	
	concentration of surface water into SW-004A	C s4A =	0.0005 (mg/L)	
	concentration of surface water into SW-005	C s5 =	0.0005 (mg/L)	
	concentration of surface water into USGS Gage	C s6 =	0.0005 (mg/L)	
	concentration of surface water into Colby Lake	C scl =	0.0005 (mg/L)	
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0005 (mg/L)	
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0002 (mg/L)	
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)	
	concentration of ground water into SW-001	C g1 =	0.0011 (mg/L)	
	concentration of ground water into SW-002	C g2 =	0.0011 (mg/L)	
	concentration of ground water into SW-003	C g3 =	0.0011 (mg/L)	
	concentration of ground water into SW-004	C g4 =	0.0011 (mg/L)	
	concentration of ground water into SW-004A	C g4A =	0.0011 (mg/L)	
	concentration of ground water into SW-005	C g5 =	0.0011 (mg/L)	
	concentration of ground water into USGS Gage	C g6 =	0.0011 (mg/L)	
	concentration of ground water into Colby Lake	C gcl =	0.0011 (mg/L)	
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)	
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)	
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.0528 (mg/L)	
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.0528 (mg/L)	
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0528 (mg/L)	
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0528 (mg/L)	
	concentration of liner leakage from LOSP	C gC4LO =	0.0528 (mg/L)	
	concentration of seepage from Overburden (Storage)	C gOS =	0.0007 (mg/L)	
	concentration of seepage from Overburden (Cat 1)	C gO12 =	(mg/L)	
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.0528 (mg/L)	
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.0528 (mg/L)	
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.0528 (mg/L)	
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0528 (mg/L)	
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0528 (mg/L)	
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0007 (mg/L)	
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)	
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0011 (mg/L)	
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0011 (mg/L)	
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0011 (mg/L)	
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0140 (mg/L)	
	Convert concentration to mass flux	Low Flow		
		mass flux of surface water into SW-001	M s1 =	(mg/s)
		mass flux of ground water into SW-001	M g1 =	0.00571 (mg/s)
		mass flux of surface discharges from upstream of PM-1	M sns =	0.00425 (mg/s)
		mass flux of surface water into SW-002	M s2 =	(mg/s)
mass flux of ground water into SW-002		M g2 =	0.00817 (mg/s)	
mass flux of surface water into SW-003		M s3 =	(mg/s)	
mass flux of ground water into SW-003		M g3 =	0.00323 (mg/s)	
mass flux of seepage from East Pit to SW-003		M gep_003 =	#N/A (mg/s)	
mass flux of liner leakage from Cat 2/3 stockpile to SW-003		M gC3_003 =	0.00003 (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-003		M gC3LO_003 =	0.00000 (mg/s)	
mass flux of liner leakage from Cat 2/3 sumps to SW-003		M gC3s_003 =	0.00000 (mg/s)	
mass flux of surface water into SW-004		M s4 =	(mg/s)	
mass flux of ground water into SW-004		M g4 =	0.00963 (mg/s)	
mass flux of seepage from East Pit to SW-004		M gep_004 =	#N/A (mg/s)	
mass flux of seepage from West Pit		M gwp =	#N/A (mg/s)	
mass flux of liner leakage from Cat 2/3 stockpile to SW-004		M gC3_004 =	- (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-004		M gC3LO_004 =	0.00000 (mg/s)	
mass flux of liner leakage from Cat 4 stockpile		M gC4 =	0.00000 (mg/s)	
mass flux of liner leakage from LOSP		M gC4LO =	0.00001 (mg/s)	
mass flux of seepage from Overburden (Storage)		M gOS =	0.00146 (mg/s)	
mass flux of liner leakage from Cat 3LO sumps to SW-004		M gC3LOs_004 =	0.00000 (mg/s)	
mass flux of liner leakage from Cat 4 sumps		M gC4s =	0.00000 (mg/s)	
mass flux of liner leakage from LOSP sumps		M gC4LOs =	0.00000 (mg/s)	
mass flux of seepage from Overburden Ponds - PW1		M gOp1 =	0.00036 (mg/s)	
mass flux of leakage from Haul Road Pond - PW2		M gHRp2 =	0.00000 (mg/s)	
mass flux of leakage from Haul Road Pond - PW4		M gHRp4 =	0.00000 (mg/s)	
mass flux of leakage from RTH Pond - PW3		M gRTHp =	0.00000 (mg/s)	
mass flux of liner leakage from WWTF pond		M gWTFp =	0.00001 (mg/s)	
mass flux of surface water into SW-004A		M s4A =	- (mg/s)	
mass flux of ground water into SW-004A		M g4A =	0.04378 (mg/s)	
mass flux of West Pit overflow		M sms =	#N/A (mg/s)	
mass flux of liner leakage from Cat 1 stockpile		M gC12 =	0.00925 (mg/s)	
mass flux of liner leakage from Cat 1 sumps		M gC12s =	0.00000 (mg/s)	
mass flux of seepage from Overburden (Cat 1)		M gO12 =	- (mg/s)	
mass flux of seepage from Overburden Pond - PW7		M gOp7 =	#N/A (mg/s)	
mass flux of surface water into SW-005		M s5 =	- (mg/s)	
mass flux of ground water into SW-005		M g5 =	0.07195 (mg/s)	
mass flux of surface water into USGS Gage		M s6 =	- (mg/s)	
mass flux of ground water into USGS Gage		M g6 =	0.01490 (mg/s)	
mass flux of surface water into Colby Lake		M scl =	- (mg/s)	
mass flux of ground water into Colby Lake		M gcl =	0.03708 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP		M shl =	0.00552 (mg/s)	
Mass balance at each node		Low Flow		
	mass flux in river at SW-001	M r1 =	0.0100 (mg/s)	
	mass flux in river at SW-002	M r2 =	0.0181 (mg/s)	
	mass flux in river at SW-003	M r3 =	0.0214 (mg/s)	
	mass flux in river at SW-004	M r4 =	0.0329 (mg/s)	
	mass flux in river at SW-004A	M r4A =	0.0859 (mg/s)	
	mass flux in river at SW-005	M r5 =	0.1578 (mg/s)	
	mass flux in river at USGS Gage	M r6 =	0.1727 (mg/s)	
Convert mass flux to concentration	Low Flow			
	concentration in river at SW-001	C r1 =	0.00030 (mg/L)	
	concentration in river at SW-002	C r2 =	0.00045 (mg/L)	
	concentration in river at SW-003	C r3 =	0.00049 (mg/L)	
	concentration in river at SW-004	C r4 =	0.00059 (mg/L)	
	concentration in river at SW-004A	C r4A =	0.00089 (mg/L)	
	concentration in river at SW-005	C r5 =	0.00098 (mg/L)	
	concentration in river at USGS Gage	C r6 =	0.00100 (mg/L)	
concentration in Colby Lake (H)	C cl =	0.00057 (mg/L)		

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 20 Antimony		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0015 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0015 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0015 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0015 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0015 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0015 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0015 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0015 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0015 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0015 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0015 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0015 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0015 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0015 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0015 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0015 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0015 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0015 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.0800 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.0800 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0800 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0800 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.0800 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0003 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.0004 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.0800 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.0800 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.0800 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0800 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0800 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0003 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0015 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0015 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0015 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	0.0262 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	(mg/s)
	mass flux of ground water into SW-001	M g1 =	0.00764 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.04245 (mg/s)
	mass flux of surface water into SW-002	M s2 =	(mg/s)
	mass flux of ground water into SW-002	M g2 =	0.01094 (mg/s)
	mass flux of surface water into SW-003	M s3 =	(mg/s)
	mass flux of ground water into SW-003	M g3 =	0.00432 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.00005 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	(mg/s)
	mass flux of ground water into SW-004	M g4 =	0.01290 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00001 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.00065 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.00016 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00001 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.05863 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	0.01402 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	0.00052 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	- (mg/s)
	mass flux of ground water into SW-005	M g5 =	0.09636 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.01995 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	0.04967 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.01656 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M r1 =	0.0501 (mg/s)
	mass flux in river at SW-002	M r2 =	0.0610 (mg/s)
	mass flux in river at SW-003	M r3 =	0.0654 (mg/s)
	mass flux in river at SW-004	M r4 =	0.0792 (mg/s)
	mass flux in river at SW-004A	M r4A =	0.1523 (mg/s)
	mass flux in river at SW-005	M r5 =	0.2487 (mg/s)
	mass flux in river at USGS Gage	M r6 =	0.2686 (mg/s)
mass flux into Colby Lake	M cl =	0.3349 (mg/s)	
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C r1 =	0.00150 (mg/L)
	concentration in river at SW-002	C r2 =	0.00150 (mg/L)
	concentration in river at SW-003	C r3 =	0.00149 (mg/L)
	concentration in river at SW-004	C r4 =	0.00143 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00159 (mg/L)
	concentration in river at SW-005	C r5 =	0.00155 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00155 (mg/L)
	concentration in Colby Lake (H	C cl =	0.00151 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 20 Selenium		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0005 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0005 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0005 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0005 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0005 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0005 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0005 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0005 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0005 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0005 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0019 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0019 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0019 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0019 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0019 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0019 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0019 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0019 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.0029 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.0029 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0029 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0029 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.0029 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0004 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.0019 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.0029 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.0029 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.0029 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0029 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0029 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0004 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0019 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0019 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0019 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0022 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	(mg/s)
	mass flux of ground water into SW-001	M g1 =	0.00973 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.01415 (mg/s)
	mass flux of surface water into SW-002	M s2 =	(mg/s)
	mass flux of ground water into SW-002	M g2 =	0.01393 (mg/s)
	mass flux of surface water into SW-003	M s3 =	(mg/s)
	mass flux of ground water into SW-003	M g3 =	0.00550 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	(mg/s)
	mass flux of ground water into SW-004	M g4 =	0.01642 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.00096 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.00024 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00000 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.07466 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	0.00051 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	0.00246 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	- (mg/s)
	mass flux of ground water into SW-005	M g5 =	0.12270 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.02540 (mg/s)
mass flux of surface water into Colby Lake	M scl =	- (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	0.06324 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.00552 (mg/s)	
Mass balance at each node			Low Flow
	mass flux in river at SW-001	M r1 =	0.0239 (mg/s)
	mass flux in river at SW-002	M r2 =	0.0378 (mg/s)
	mass flux in river at SW-003	M r3 =	0.0433 (mg/s)
	mass flux in river at SW-004	M r4 =	0.0809 (mg/s)
	mass flux in river at SW-004A	M r4A =	0.1386 (mg/s)
	mass flux in river at SW-005	M r5 =	0.2613 (mg/s)
mass flux in river at USGS Gage	M r6 =	0.2867 (mg/s)	
mass flux into Colby Lake	M cl =	0.3554 (mg/s)	
Convert mass flux to concentration			Low Flow
	concentration in river at SW-001	C r1 =	0.00072 (mg/L)
	concentration in river at SW-002	C r2 =	0.00093 (mg/L)
	concentration in river at SW-003	C r3 =	0.00099 (mg/L)
	concentration in river at SW-004	C r4 =	0.00110 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00144 (mg/L)
	concentration in river at SW-005	C r5 =	0.00163 (mg/L)
concentration in river at USGS Gage	C r6 =	0.00165 (mg/L)	
concentration in Colby Lake (H)	C cl =	0.00066 (mg/L)	

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case	Year 20			
Parameter	Sulfate			
Input concentration data	concentration of surface water into SW-001	C s1 =	9.0000 (mg/L)	
	concentration of surface water into SW-002	C s2 =	9.0000 (mg/L)	
	concentration of surface water into SW-003	C s3 =	9.0000 (mg/L)	
	concentration of surface water into SW-004	C s4 =	9.0000 (mg/L)	
	concentration of surface water into SW-004A	C s4A =	9.0000 (mg/L)	
	concentration of surface water into SW-005	C s5 =	9.0000 (mg/L)	
	concentration of surface water into USGS Gage	C s6 =	9.0000 (mg/L)	
	concentration of surface water into Colby Lake	C scl =	9.0000 (mg/L)	
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	22.0000 (mg/L)	
	concentration of surface water discharges from upstream of PM-1	C sns =	22.0000 (mg/L)	
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)	
	concentration of ground water into SW-001	C g1 =	16.1300 (mg/L)	
	concentration of ground water into SW-002	C g2 =	16.1300 (mg/L)	
	concentration of ground water into SW-003	C g3 =	16.1300 (mg/L)	
	concentration of ground water into SW-004	C g4 =	16.1300 (mg/L)	
	concentration of ground water into SW-004A	C g4A =	16.1300 (mg/L)	
	concentration of ground water into SW-005	C g5 =	16.1300 (mg/L)	
	concentration of ground water into USGS Gage	C g6 =	16.1300 (mg/L)	
	concentration of ground water into Colby Lake	C gcl =	16.1300 (mg/L)	
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)	
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)	
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	1,854.0847 (mg/L)	
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	2,340.0000 (mg/L)	
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	2,340.0000 (mg/L)	
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	2,340.0000 (mg/L)	
	concentration of liner leakage from LOSP	C gC4LO =	9,600.0000 (mg/L)	
	concentration of seepage from Overburden (Storage)	C gOS =	35.1700 (mg/L)	
	concentration of seepage from Overburden (Cat 1)	C gO12 =	68.3000 (mg/L)	
	concentration of liner leakage from Cat 1 sumps	C gC12s =	1,854.0847 (mg/L)	
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	2,340.0000 (mg/L)	
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	2,340.0000 (mg/L)	
	concentration of liner leakage from Cat 4 sumps	C gC4s =	2,340.0000 (mg/L)	
	concentration of liner leakage from LOSP sumps	C gC4LOs =	9,600.0000 (mg/L)	
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	35.1700 (mg/L)	
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)	
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	16.1300 (mg/L)	
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	16.1300 (mg/L)	
	concentration of leakage from RTH Pond - PW3	C gRTHp =	16.1300 (mg/L)	
	concentration of liner leakage from WWTF ponc	C_gWTFp =	490.1065 (mg/L)	
	Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	(mg/s)
		mass flux of ground water into SW-001	M g1 =	82.16622 (mg/s)
		mass flux of surface discharges from upstream of PM-1	M sns =	622.60000 (mg/s)
mass flux of surface water into SW-002		M s2 =	(mg/s)	
mass flux of ground water into SW-002		M g2 =	117.67506 (mg/s)	
mass flux of surface water into SW-003		M s3 =	(mg/s)	
mass flux of ground water into SW-003		M g3 =	46.44826 (mg/s)	
mass flux of seepage from East Pit to SW-003		M gep_003 =	#N/A (mg/s)	
mass flux of liner leakage from Cat 2/3 stockpile to SW-003		M gC3_003 =	1.32854 (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-003		M gC3LO_003 =	0.21233 (mg/s)	
mass flux of liner leakage from Cat 2/3 sumps to SW-003		M gC3s_003 =	0.00189 (mg/s)	
mass flux of surface water into SW-004		M s4 =	(mg/s)	
mass flux of ground water into SW-004		M g4 =	138.69170 (mg/s)	
mass flux of seepage from East Pit to SW-004		M gep_004 =	#N/A (mg/s)	
mass flux of seepage from West Pit		M gwp =	#N/A (mg/s)	
mass flux of liner leakage from Cat 2/3 stockpile to SW-004		M gC3_004 =	- (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-004		M gC3LO_004 =	0.21233 (mg/s)	
mass flux of liner leakage from Cat 4 stockpile		M gC4 =	0.15556 (mg/s)	
mass flux of liner leakage from LOSP		M gC4LO =	1.26303 (mg/s)	
mass flux of seepage from Overburden (Storage)		M gOS =	76.11262 (mg/s)	
mass flux of liner leakage from Cat 3LO sumps to SW-004		M gC3LOs_004 =	0.00180 (mg/s)	
mass flux of liner leakage from Cat 4 sumps		M gC4s =	0.00164 (mg/s)	
mass flux of liner leakage from LOSP sumps		M gC4LOs =	0.01279 (mg/s)	
mass flux of seepage from Overburden Ponds - PW1		M gOp1 =	18.81988 (mg/s)	
mass flux of leakage from Haul Road Pond - PW2		M gHRp2 =	0.00614 (mg/s)	
mass flux of leakage from Haul Road Pond - PW4		M gHRp4 =	0.01315 (mg/s)	
mass flux of leakage from RTH Pond - PW3		M gRTHp =	0.00000 (mg/s)	
mass flux of liner leakage from WWTF pond		M gWTFp =	0.22527 (mg/s)	
mass flux of surface water into SW-004A		M s4A =	- (mg/s)	
mass flux of ground water into SW-004A		M g4A =	630.46901 (mg/s)	
mass flux of West Pit overflow		M sms =	#N/A (mg/s)	
mass flux of liner leakage from Cat 1 stockpile		M gC12 =	324.92389 (mg/s)	
mass flux of liner leakage from Cat 1 sumps		M gC12s =	0.04063 (mg/s)	
mass flux of seepage from Overburden (Cat 1)		M gO12 =	88.29738 (mg/s)	
mass flux of seepage from Overburden Pond - PW7		M gOp7 =	#N/A (mg/s)	
mass flux of surface water into SW-005		M s5 =	- (mg/s)	
mass flux of ground water into SW-005		M g5 =	1,036.20733 (mg/s)	
mass flux of surface water into USGS Gage		M s6 =	- (mg/s)	
mass flux of ground water into USGS Gage		M g6 =	214.54513 (mg/s)	
mass flux of surface water into Colby Lake		M scl =	- (mg/s)	
mass flux of ground water into Colby Lake		M gcl =	534.08043 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP		M shl =	99.33300 (mg/s)	
Mass balance at each node	Low Flow			
	mass flux in river at SW-001	M r1 =	704.7662 (mg/s)	
	mass flux in river at SW-002	M r2 =	822.4413 (mg/s)	
	mass flux in river at SW-003	M r3 =	870.4323 (mg/s)	
	mass flux in river at SW-004	M r4 =	1,105.9501 (mg/s)	
	mass flux in river at SW-004A	M r4A =	2,149.6810 (mg/s)	
	mass flux in river at SW-005	M r5 =	3,185.8863 (mg/s)	
	mass flux in river at USGS Gage	M r6 =	3,400.4334 (mg/s)	
mass flux into Colby Lake	M cl =	4,033.8469 (mg/s)		
Convert mass flux to concentration	Low Flow			
	concentration in river at SW-001	C r1 =	21.10458 (mg/L)	
	concentration in river at SW-002	C r2 =	20.21266 (mg/L)	
	concentration in river at SW-003	C r3 =	19.83428 (mg/L)	
	concentration in river at SW-004	C r4 =	19.92690 (mg/L)	
	concentration in river at SW-004A	C r4A =	22.37966 (mg/L)	
	concentration in river at SW-005	C r5 =	19.87502 (mg/L)	
	concentration in river at USGS Gage	C r6 =	19.58807 (mg/L)	
	concentration in Colby Lake (H	C cl =	10.39048 (mg/L)	

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 20 Thallium		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0004 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0004 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0004 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0004 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0004 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0004 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0004 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0004 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0004 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0003 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0000 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0000 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0000 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0000 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0000 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0000 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0000 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0000 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0000 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.0001 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0000 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0001 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0000 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0000 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0000 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0000 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0012 (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M s1 =	- (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.00002 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.00809 (mg/s)
	mass flux of surface water into SW-002	M s2 =	- (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.00003 (mg/s)
	mass flux of surface water into SW-003	M s3 =	- (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.00001 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	- (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.00003 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.00009 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.00002 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00000 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.00016 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	- (mg/s)
	mass flux of ground water into SW-005	M g5 =	0.00026 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	- (mg/s)
mass flux of ground water into USGS Gage	M g6 =	0.00005 (mg/s)	
mass flux of surface water into Colby Lake	M scl =	- (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	0.00013 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.00441 (mg/s)	
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M r1 =	0.0081 (mg/s)
	mass flux in river at SW-002	M r2 =	0.0081 (mg/s)
	mass flux in river at SW-003	M r3 =	0.0082 (mg/s)
	mass flux in river at SW-004	M r4 =	0.0083 (mg/s)
	mass flux in river at SW-004A	M r4A =	0.0085 (mg/s)
	mass flux in river at SW-005	M r5 =	0.0087 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M r6 =	0.0088 (mg/s)
	mass flux into Colby Lake	M cl =	0.0133 (mg/s)
	Low Flow		
	concentration in river at SW-001	C r1 =	0.00024 (mg/L)
	concentration in river at SW-002	C r2 =	0.00020 (mg/L)
	concentration in river at SW-003	C r3 =	0.00019 (mg/L)
	concentration in river at SW-004	C r4 =	0.00015 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00009 (mg/L)
	concentration in river at SW-005	C r5 =	0.00005 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00005 (mg/L)
	concentration in Colby Lake (H)	C cl =	0.00035 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case		Year 20	
Parameter		Vanadium	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0009 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0009 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0009 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0009 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0009 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0009 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0009 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0009 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0009 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0043 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0043 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0043 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0043 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0043 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0043 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0043 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0043 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0043 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.2858 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.4165 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.5495 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.7719 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0429 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0017 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.0014 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.2858 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.4165 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.5495 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.7719 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0429 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0017 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0043 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0043 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0043 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0719 (mg/L)
Low Flow			
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.02190 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.12169 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.03137 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.01238 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00024 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00005 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.03697 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00005 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00005 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00374 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00093 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00003 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.16807 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.05009 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.00181 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.27624 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.05719 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.14238 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00993 (mg/s)
Low Flow			
Mass balance at each node	mass flux in river at SW-001	M_r1 =	0.1438 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.1760 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.1876 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.2294 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.4484 (mg/s)
	mass flux in river at SW-005	M_r5 =	0.7256 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	0.7828 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	0.9351 (mg/s)
	concentration in river at SW-001	C_r1 =	0.00430 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00430 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00428 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00413 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00468 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00453 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00451 (mg/L)
	concentration in Colby Lake (H	C_cl =	0.00139 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 20 Zinc		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0160 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0160 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0160 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0160 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0160 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0160 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0160 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0160 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0620 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0073 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0275 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0275 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0275 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0275 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0275 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0275 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0275 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0275 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.0900 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.0900 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0900 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0900 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	26.0000 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0046 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.0030 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.0900 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.0900 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.0900 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0900 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	26.0000 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0046 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0275 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0275 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0275 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	0.0505 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	(mg/s)
	mass flux of ground water into SW-001	M g1 =	0.14009 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.20744 (mg/s)
	mass flux of surface water into SW-002	M s2 =	(mg/s)
	mass flux of ground water into SW-002	M g2 =	0.20062 (mg/s)
	mass flux of surface water into SW-003	M s3 =	(mg/s)
	mass flux of ground water into SW-003	M g3 =	0.07919 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.00005 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	(mg/s)
	mass flux of ground water into SW-004	M g4 =	0.23646 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00001 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00342 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.00987 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00003 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.00244 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00001 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00002 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00002 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M g4A =	1.07489 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	0.01577 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	0.00388 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	- (mg/s)
	mass flux of ground water into SW-005	M g5 =	1.76663 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.36578 (mg/s)
mass flux of surface water into Colby Lake	M scl =	- (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	0.91055 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.68429 (mg/s)	
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M r1 =	0.3475 (mg/s)
	mass flux in river at SW-002	M r2 =	0.5481 (mg/s)
	mass flux in river at SW-003	M r3 =	0.6274 (mg/s)
	mass flux in river at SW-004	M r4 =	0.8797 (mg/s)
	mass flux in river at SW-004A	M r4A =	1.9742 (mg/s)
	mass flux in river at SW-005	M r5 =	3.7409 (mg/s)
	mass flux in river at USGS Gage	M r6 =	4.1066 (mg/s)
mass flux into Colby Lake	M cl =	5.7015 (mg/s)	
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C r1 =	0.01041 (mg/L)
	concentration in river at SW-002	C r2 =	0.01347 (mg/L)
	concentration in river at SW-003	C r3 =	0.01430 (mg/L)
	concentration in river at SW-004	C r4 =	0.01585 (mg/L)
	concentration in river at SW-004A	C r4A =	0.02055 (mg/L)
	concentration in river at SW-005	C r5 =	0.02334 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.02366 (mg/L)
	concentration in Colby Lake (H	C cl =	0.01748 (mg/L)

## Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

### FLOWS

Case Flow	Year 20 Average Flow Conditions (mean annual)		
Total flow in Partridge River	flow in river at SW-001	Q_r1_M =	5.70 (cfs)
	flow in river at SW-002	Q_r2_M =	11.27 (cfs)
	flow in river at SW-003	Q_r3_M =	12.94 (cfs)
	flow in river at SW-004	Q_r4_M =	19.07 (cfs)
	flow in river at SW-004A	Q_r4a_M =	43.68 (cfs)
	flow in river at SW-005	Q_r5_M =	82.07 (cfs)
	flow in river at USGS Gage	Q_r6_M =	86.42 (cfs)
	total flow into Colby Lake	Q_cl_M =	111.54 (cfs)
	flow check	Q_ck_M =	111.54 (cfs)
input flow data	surface water flow into SW-001	Q_s1_M =	4.52 (cfs)
	surface water flow into SW-002	Q_s2_M =	5.32 (cfs)
	surface water flow into SW-003	Q_s3_M =	1.55 (cfs)
	surface water flow into SW-004	Q_s4_M =	5.72 (cfs)
	surface water flow into SW-004A	Q_s4a_M =	23.16 (cfs)
	surface water flow into SW-005	Q_s5_M =	36.12 (cfs)
	surface water flow into USGS Gage	Q_s6_M =	3.88 (cfs)
	surface water flow into Colby Lake	Q_scl_M =	23.56 (cfs)
	surface water inflow from Hoyt Lakes WWTP	Q_shl_M =	0.39 (cfs)
	surface water inflow from discharges upstream of PM-1	Q_sns_M =	1.00 (cfs)
	surface water flow from West Pit overflow	Q_sms_M =	- (cfs)
	ground water flow into SW-001	Q_g1_M =	0.18 (cfs)
	ground water flow into SW-002	Q_g2_M =	0.26 (cfs)
	ground water flow into SW-003	Q_g3_M =	0.10 (cfs)
	ground water flow into SW-004	Q_g4_M =	0.30 (cfs)
	ground water flow into SW-004A	Q_g4a_M =	1.38 (cfs)
	ground water flow into SW-005	Q_g5_M =	2.27 (cfs)
	ground water flow into USGS Gage	Q_g6_M =	0.47 (cfs)
	ground water flow into Colby Lake	Q_gcl_M =	1.17 (cfs)
	ground water seepage from East Pit to SW-003	Q_gep_003_M =	0.0112 (cfs)
	ground water seepage from East Pit to SW-004	Q_gep_004_M =	0.0112 (cfs)
	ground water seepage from West Pit	Q_gwp_M =	- (cfs)
	ground water liner leakage from Cat 1 stockpile	Q_gC12_M =	0.0085 (cfs)
	ground water liner leakage from Cat 2/3 stockpile to SW-003	Q_gC3_003_M =	0.0000 (cfs)
	ground water liner leakage from Cat 2/3 stockpile to SW-004	Q_gC3_004_M =	- (cfs)
	ground water liner leakage from Cat 3LO stockpile to SW-003	Q_gC3LO_003_M =	0.0000 (cfs)
	ground water liner leakage from Cat 3LO stockpile to SW-004	Q_gC3LO_004_M =	0.0000 (cfs)
	ground water liner leakage from Cat 4 stockpile	Q_gC4_M =	0.0000 (cfs)
	ground water liner leakage from LOSP	Q_gC4LO_M =	0.0000 (cfs)
	ground water seepage from Overburden Storage	Q_gOS_M =	0.0765 (cfs)
	ground water seepage from Overburden (Cat 1)	Q_gO12_M =	0.0628 (cfs)
	ground water liner leakage from Cat 1 sumps	Q_gC12s_M =	0.0000 (cfs)
	ground water liner leakage from Cat 2/3 sumps	Q_gC3s_M =	0.0000 (cfs)
	ground water liner leakage from Cat 3LO sumps	Q_gC3LOs_M =	0.0000 (cfs)
	ground water liner leakage from Cat 4 sumps	Q_gC4s_M =	0.0000 (cfs)
	ground water liner leakage from LOSP sumps	Q_gC4LOs_M =	0.0000 (cfs)
	ground water seepage from Overburden pond - PW1	Q_gOp1_M =	0.0189 (cfs)
	ground water seepage from Overburden pond - PW7	Q_gOp7_M =	- (cfs)
	ground water liner leakage from Haul Road pond - PW2	Q_gHRp2_M =	0.0000 (cfs)
	ground water liner leakage from Haul Road pond - PW4	Q_gHRp4_M =	0.0000 (cfs)
	ground water liner leakage from RTH pond - PW3	Q_gRTHp_M =	0.0000 (cfs)
	ground water liner leakage from WWTF pond	Q_gWTFp_M =	0.000016 (cfs)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case	Year 20		
Parameter	Silver		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0001 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0001 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0001 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0001 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0001 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0001 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0001 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0001 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0001 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0001 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0006 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0006 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0006 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0006 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0006 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0006 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0006 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0006 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.0007 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.0007 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0007 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0007 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.0007 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	- (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.0007 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.0007 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.0007 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0007 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0007 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	- (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0006 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0006 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0006 (mg/L)
	concentration of liner leakage from WWTF pond	C gWTFp =	0.0008 (mg/L)
Average Flow			
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	0.01279 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.00280 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.00340 (mg/s)
	mass flux of surface water into SW-002	M s2 =	0.01504 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.00401 (mg/s)
	mass flux of surface water into SW-003	M s3 =	0.00440 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.00158 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep 003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3 003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO 003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s 003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	0.01618 (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.00473 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep 004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3 004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO 004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	- (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs 004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00000 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	0.06555 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.02150 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	0.00017 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	0.10221 (mg/s)
	mass flux of ground water into SW-005	M g5 =	0.03533 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	0.01098 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.00732 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	0.06667 (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	0.01821 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.00110 (mg/s)
Average Flow			
Mass balance at each node	mass flux in river at SW-001	M r1 =	0.0190 (mg/s)
	mass flux in river at SW-002	M r2 =	0.0380 (mg/s)
	mass flux in river at SW-003	M r3 =	0.0440 (mg/s)
	mass flux in river at SW-004	M r4 =	0.0649 (mg/s)
	mass flux in river at SW-004A	M r4A =	0.1522 (mg/s)
	mass flux in river at SW-005	M r5 =	0.2897 (mg/s)
	mass flux in river at USGS Gage	M r6 =	0.3080 (mg/s)
mass flux into Colby Lake	M cl =	0.3940 (mg/s)	
Average Flow			
Convert mass flux to concentration	concentration in river at SW-001	C r1 =	0.00012 (mg/L)
	concentration in river at SW-002	C r2 =	0.00012 (mg/L)
	concentration in river at SW-003	C r3 =	0.00012 (mg/L)
	concentration in river at SW-004	C r4 =	0.00012 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00012 (mg/L)
	concentration in river at SW-005	C r5 =	0.00012 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00013 (mg/L)
	concentration in Colby Lake	C cl =	0.00012 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case		Year 20	
Parameter		Aluminum	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0700 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0700 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0700 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0700 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0700 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0700 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0700 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0700 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0700 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0173 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.1250 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.1250 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.1250 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.1250 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.1250 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.1250 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.1250 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.1250 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	1.6800 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	1.6800 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	1.6800 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	1.6800 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	83.0000 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.4106 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.1400 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	1.6800 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	1.6800 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	1.6800 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	1.6800 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	83.0000 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.4106 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.1250 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.1250 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.1250 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.5719 (mg/L)
		Average Flow	
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	8.95493 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.63675 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.48959 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	10.53129 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.91193 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	3.07678 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.35995 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00192 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00030 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	11.32381 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	1.07480 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00030 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00018 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.01786 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.88859 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00011 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.21972 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00005 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00010 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00026 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	45.88627 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	4.88584 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.40448 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00004 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.24865 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	71.54827 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	8.03013 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	7.68709 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	1.66263 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	46.67236 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	4.13888 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.77259 (mg/s)
		Average Flow	
Mass balance at each node	mass flux in river at SW-001	M_r1 =	10.0813 (mg/s)
	mass flux in river at SW-002	M_r2 =	21.5245 (mg/s)
	mass flux in river at SW-003	M_r3 =	24.9635 (mg/s)
	mass flux in river at SW-004	M_r4 =	38.4892 (mg/s)
	mass flux in river at SW-004A	M_r4A =	39.9145 (mg/s)
	mass flux in river at SW-005	M_r5 =	169.4929 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	178.8426 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	230.4265 (mg/s)
			Average Flow
	concentration in river at SW-001	C_r1 =	0.06249 (mg/L)
	concentration in river at SW-002	C_r2 =	0.06746 (mg/L)
	concentration in river at SW-003	C_r3 =	0.06817 (mg/L)
	concentration in river at SW-004	C_r4 =	0.07133 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.07273 (mg/L)
	concentration in river at SW-005	C_r5 =	0.07298 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.07313 (mg/L)
	concentration in Colby Lake	C_cl =	0.07300 (mg/L)

Case Parameter	Year 20 Arsenic
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			Average Flow
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	0.26993 (mg/s)
	mass flux of ground water into SW-001	M q1 =	0.01100 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.18395 (mg/s)
	mass flux of surface water into SW-002	M s2 =	0.31744 (mg/s)
	mass flux of ground water into SW-002	M q2 =	0.01576 (mg/s)
	mass flux of surface water into SW-003	M s3 =	0.09274 (mg/s)
	mass flux of ground water into SW-003	M q3 =	0.00622 (mg/s)
	mass flux of seepage from East Pit to SW-003	M dep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M qC3_003 =	0.00037 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M qC3LO_003 =	0.00008 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M qC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	0.34133 (mg/s)
	mass flux of ground water into SW-004	M q4 =	0.01857 (mg/s)
	mass flux of seepage from East Pit to SW-004	M dep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M dep_004 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M qC3_004 =	0.00008 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M qC3LO_004 =	0.00008 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M qC4 =	0.00008 (mg/s)
	mass flux of liner leakage from LOSP	M qC4LO =	0.00003 (mg/s)
	mass flux of seepage from Overburden (Storage)	M qOS =	0.00338 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M qC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M qC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M qC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M qOp1 =	0.00083 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M qHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M qHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M qRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M qWTFp =	0.00006 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	1.38314 (mg/s)
	mass flux of ground water into SW-004A	M q4A =	0.08443 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M qC12 =	0.05385 (mg/s)
mass flux of liner leakage from Cat 1 sumps	M qC12s =	0.00000 (mg/s)	
mass flux of seepage from Overburden (Cat 1)	M qO12 =	0.00480 (mg/s)	
mass flux of seepage from Overburden Pond - PW7	M qOp7 =	#N/A (mg/s)	
mass flux of surface water into SW-005	M s5 =	2.15667 (mg/s)	
mass flux of ground water into SW-005	M q5 =	0.13876 (mg/s)	
mass flux of surface water into USGS Gage	M s6 =	0.23171 (mg/s)	
mass flux of ground water into USGS Gage	M q6 =	0.02873 (mg/s)	
mass flux of surface water into Colby Lake	M scl =	1.40684 (mg/s)	
mass flux of ground water into Colby Lake	M qcl =	0.07152 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.02329 (mg/s)	
			Average Flow
Mass balance at each node	mass flux in river at SW-001	M r1 =	0.4649 (mg/s)
	mass flux in river at SW-002	M r2 =	0.7981 (mg/s)
	mass flux in river at SW-003	M r3 =	0.8975 (mg/s)
	mass flux in river at SW-004	M r4 =	1.2619 (mg/s)
	mass flux in river at SW-004A	M r4A =	2.7881 (mg/s)
	mass flux in river at SW-005	M r5 =	5.0835 (mg/s)
	mass flux in river at USGS Gage	M r6 =	5.3439 (mg/s)
	mass flux into Colby Lake	M cl =	6.8456 (mg/s)
			Average Flow
Convert mass flux to concentration	concentration in river at SW-001	C r1 =	0.00288 (mg/L)
	concentration in river at SW-002	C r2 =	0.00250 (mg/L)
	concentration in river at SW-003	C r3 =	0.00245 (mg/L)
	concentration in river at SW-004	C r4 =	0.00234 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00226 (mg/L)
	concentration in river at SW-005	C r5 =	0.00219 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00219 (mg/L)
	concentration in Colby Lake	C cl =	0.00217 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case		Year 20	
Parameter		Boron	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0450 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0450 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0450 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0450 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0450 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0450 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0450 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0450 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0450 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0960 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0870 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0870 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0870 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0870 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0870 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0870 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0870 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0870 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.7600 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.7600 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.7600 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.7600 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.7600 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0622 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.0370 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.7600 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.7600 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.7600 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.7600 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.7600 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0622 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0870 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0870 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0870 (mg/L)
	concentration of liner leakage from WWTF ponc	C_gWTFp =	0.2524 (mg/L)
Average Flow			
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	5.75674 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.44318 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	2.71680 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	6.77012 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.63470 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	1.97793 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.25053 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00087 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00014 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	7.27959 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.74806 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00014 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00008 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00016 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.13461 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.03328 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00003 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00007 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00012 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	29.49832 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	3.40055 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.18298 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00002 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.06572 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	45.99532 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	5.58897 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	4.94170 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	1.15719 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	30.00366 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	2.88066 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.49667 (mg/s)
Average Flow			
Mass balance at each node	mass flux in river at SW-001	M_r1 =	8.9167 (mg/s)
	mass flux in river at SW-002	M_r2 =	16.3215 (mg/s)
	mass flux in river at SW-003	M_r3 =	18.5510 (mg/s)
	mass flux in river at SW-004	M_r4 =	26.7472 (mg/s)
	mass flux in river at SW-004A	M_r4A =	59.8947 (mg/s)
	mass flux in river at SW-005	M_r5 =	111.4790 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	117.5779 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	150.9589 (mg/s)
	concentration in river at SW-001	C_r1 =	0.05527 (mg/L)
	concentration in river at SW-002	C_r2 =	0.05115 (mg/L)
	concentration in river at SW-003	C_r3 =	0.05066 (mg/L)
	concentration in river at SW-004	C_r4 =	0.04957 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.04845 (mg/L)
	concentration in river at SW-005	C_r5 =	0.04800 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.04808 (mg/L)
	concentration in Colby Lake	C_cl =	0.04782 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case	Year 20			
Parameter	Barium			
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0077	(mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0077	(mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0077	(mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0077	(mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0077	(mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0077	(mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0077	(mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0077	(mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0077	(mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0050	(mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A	(mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0219	(mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0219	(mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0219	(mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0219	(mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0219	(mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0219	(mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0219	(mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0219	(mg/L)
	concentration of ground water seepage from East Pit	C_gwp =	#N/A	(mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A	(mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.1900	(mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.1900	(mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.1900	(mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.1900	(mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.1900	(mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0168	(mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.0140	(mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.1900	(mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.1900	(mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.1900	(mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.1900	(mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.1900	(mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0168	(mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A	(mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0219	(mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0219	(mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0219	(mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0639	(mg/L)
				Average Flow
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	0.98248	(mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.11166	(mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.14150	(mg/s)
	mass flux of surface water into SW-002	M_s2 =	1.15543	(mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.15992	(mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.33757	(mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.06312	(mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A	(mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00022	(mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00003	(mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000	(mg/s)
	mass flux of surface water into SW-004	M_s4 =	1.24238	(mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.18848	(mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A	(mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A	(mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	-	(mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00003	(mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00002	(mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00004	(mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.03643	(mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000	(mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000	(mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000	(mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00901	(mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00001	(mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00002	(mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000	(mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00003	(mg/s)
	mass flux of surface water into SW-004A	M_s4A =	5.03438	(mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.85678	(mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A	(mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.04574	(mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000	(mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.02487	(mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A	(mg/s)
	mass flux of surface water into SW-005	M_s5 =	7.84987	(mg/s)
	mass flux of ground water into SW-005	M_g5 =	1.40816	(mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.84338	(mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.29156	(mg/s)
	mass flux of surface water into Colby Lake	M_scl =	5.12062	(mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.72579	(mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.08476	(mg/s)
				Average Flow
Mass balance at each node	mass flux in river at SW-001	M_r1 =	1.2358	(mg/s)
	mass flux in river at SW-002	M_r2 =	2.5510	(mg/s)
	mass flux in river at SW-003	M_r3 =	2.9519	(mg/s)
	mass flux in river at SW-004	M_r4 =	4.4284	(mg/s)
	mass flux in river at SW-004A	M_r4A =	10.3902	(mg/s)
	mass flux in river at SW-005	M_r5 =	19.6482	(mg/s)
	mass flux in river at USGS Gage	M_r6 =	20.7831	(mg/s)
mass flux into Colby Lake	M_cl =	26.7143	(mg/s)	
				Average Flow
Convert mass flux to concentration	concentration in river at SW-001	C_r1 =	0.00766	(mg/L)
	concentration in river at SW-002	C_r2 =	0.00800	(mg/L)
	concentration in river at SW-003	C_r3 =	0.00806	(mg/L)
	concentration in river at SW-004	C_r4 =	0.00821	(mg/L)
	concentration in river at SW-004A	C_r4A =	0.00840	(mg/L)
	concentration in river at SW-005	C_r5 =	0.00846	(mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00850	(mg/L)
	concentration in Colby Lake	C_cl =	0.00846	(mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case		Year 20	
Parameter		Beryllium	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0001 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0001 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0001 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0001 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0001 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0001 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0001 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0001 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0001 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0001 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0001 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0001 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0001 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0001 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0001 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0001 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0001 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0001 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0002 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0002 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0023 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	- (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0002 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0002 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0023 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	- (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0001 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0001 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0001 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0003 (mg/L)
		Average Flow	
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	0.01279 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00074 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.00283 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	0.01504 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.00106 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.00440 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00042 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.01618 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.00125 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	- (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00000 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	0.06555 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.00567 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.00005 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	0.10221 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.00931 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.01098 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.00193 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	0.06667 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.00480 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00110 (mg/s)
		Average Flow	
Mass balance at each node	mass flux in river at SW-001	M_r1 =	0.0164 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.0325 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.0373 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.0547 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.1260 (mg/s)
	mass flux in river at SW-005	M_r5 =	0.2375 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	0.2504 (mg/s)
	mass flux into Colby Lake	M_cl =	0.3230 (mg/s)
		Average Flow	
Convert mass flux to concentration	concentration in river at SW-001	C_r1 =	0.00010 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00010 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00010 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00010 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00010 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00010 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00010 (mg/L)
	concentration in Colby Lake	C_cl =	0.00010 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case	Year 20			
Parameter	Calcium			
Input concentration data	concentration of surface water into SW-001	C s1 =	17.0000 (mg/L)	
	concentration of surface water into SW-002	C s2 =	17.0000 (mg/L)	
	concentration of surface water into SW-003	C s3 =	17.0000 (mg/L)	
	concentration of surface water into SW-004	C s4 =	17.0000 (mg/L)	
	concentration of surface water into SW-004A	C s4A =	17.0000 (mg/L)	
	concentration of surface water into SW-005	C s5 =	17.0000 (mg/L)	
	concentration of surface water into USGS Gage	C s6 =	17.0000 (mg/L)	
	concentration of surface water into Colby Lake	C scl =	17.0000 (mg/L)	
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	17.0000 (mg/L)	
	concentration of surface water discharges from upstream of PM-1	C sns =	24.5000 (mg/L)	
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)	
	concentration of ground water into SW-001	C g1 =	14.7900 (mg/L)	
	concentration of ground water into SW-002	C g2 =	14.7900 (mg/L)	
	concentration of ground water into SW-003	C g3 =	14.7900 (mg/L)	
	concentration of ground water into SW-004	C g4 =	14.7900 (mg/L)	
	concentration of ground water into SW-004A	C g4A =	14.7900 (mg/L)	
	concentration of ground water into SW-005	C g5 =	14.7900 (mg/L)	
	concentration of ground water into USGS Gage	C g6 =	14.7900 (mg/L)	
	concentration of ground water into Colby Lake	C gcl =	14.7900 (mg/L)	
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)	
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)	
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	540.0000 (mg/L)	
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	540.0000 (mg/L)	
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	540.0000 (mg/L)	
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	540.0000 (mg/L)	
	concentration of liner leakage from LOSP	C gC4LO =	480.0000 (mg/L)	
	concentration of seepage from Overburden (Storage)	C gOS =	9.3700 (mg/L)	
	concentration of seepage from Overburden (Cat 1)	C gO12 =	15.8000 (mg/L)	
	concentration of liner leakage from Cat 1 sumps	C gC12s =	540.0000 (mg/L)	
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	540.0000 (mg/L)	
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	540.0000 (mg/L)	
	concentration of liner leakage from Cat 4 sumps	C gC4s =	540.0000 (mg/L)	
	concentration of liner leakage from LOSP sumps	C gC4LOs =	480.0000 (mg/L)	
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	9.3700 (mg/L)	
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)	
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	14.7900 (mg/L)	
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	14.7900 (mg/L)	
	concentration of leakage from RTH Pond - PW3	C gRTHp =	14.7900 (mg/L)	
	concentration of liner leakage from WWTF pond	C_gWTFp =	149.6535 (mg/L)	
	Convert concentration to mass flux	Average Flow		
		mass flux of surface water into SW-001	M s1 =	2,174.76906 (mg/s)
		mass flux of ground water into SW-001	M g1 =	75.34026 (mg/s)
mass flux of surface discharges from upstream of PM-1		M sns =	693.35000 (mg/s)	
mass flux of surface water into SW-002		M s2 =	2,557.59996 (mg/s)	
mass flux of ground water into SW-002		M g2 =	107.89920 (mg/s)	
mass flux of surface water into SW-003		M s3 =	747.21712 (mg/s)	
mass flux of ground water into SW-003		M g3 =	42.58957 (mg/s)	
mass flux of seepage from East Pit to SW-003		M gep 003 =	#N/A (mg/s)	
mass flux of liner leakage from Cat 2/3 stockpile to SW-003		M gC3_003 =	0.61824 (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-003		M gC3LO_00 =	0.09800 (mg/s)	
mass flux of liner leakage from Cat 2/3 sumps to SW-003		M gC3s_003 =	0.00044 (mg/s)	
mass flux of surface water into SW-004		M s4 =	2,750.06839 (mg/s)	
mass flux of ground water into SW-004		M g4 =	127.16988 (mg/s)	
mass flux of seepage from East Pit to SW-004		M gep 004 =	#N/A (mg/s)	
mass flux of seepage from West Pit		M gwp =	#N/A (mg/s)	
mass flux of liner leakage from Cat 2/3 stockpile to SW-004		M gC3_004 =	- (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-004		M gC3LO_00 =	0.09800 (mg/s)	
mass flux of liner leakage from Cat 4 stockpile		M gC4 =	0.05870 (mg/s)	
mass flux of liner leakage from LOSP		M gC4LO =	0.10326 (mg/s)	
mass flux of seepage from Overburden (Storage)		M gOS =	20.27794 (mg/s)	
mass flux of liner leakage from Cat 3LO sumps to SW-004		M gC3LOs_0 =	0.00042 (mg/s)	
mass flux of liner leakage from Cat 4 sumps		M gC4s =	0.00038 (mg/s)	
mass flux of liner leakage from LOSP sumps		M gC4LOs =	0.00064 (mg/s)	
mass flux of seepage from Overburden Ponds - PW1		M gOp1 =	5.01400 (mg/s)	
mass flux of leakage from Haul Road Pond - PW2		M gHRp2 =	0.00563 (mg/s)	
mass flux of leakage from Haul Road Pond - PW4		M gHRp4 =	0.01206 (mg/s)	
mass flux of leakage from RTH Pond - PW3		M gRTHp =	0.00000 (mg/s)	
mass flux of liner leakage from WWTF pond		M gWTFp =	0.06879 (mg/s)	
mass flux of surface water into SW-004A		M s4A =	11,143.80805 (mg/s)	
mass flux of ground water into SW-004A		M g4A =	578.09279 (mg/s)	
mass flux of West Pit overflow		M sms =	#N/A (mg/s)	
mass flux of liner leakage from Cat 1 stockpile		M gC12 =	130.01168 (mg/s)	
mass flux of liner leakage from Cat 1 sumps		M gC12s =	0.01183 (mg/s)	
mass flux of seepage from Overburden (Cat 1)		M gO12 =	28.06213 (mg/s)	
mass flux of seepage from Overburden Pond - PW7		M gOp7 =	#N/A (mg/s)	
mass flux of surface water into SW-005		M s5 =	17,376.00916 (mg/s)	
mass flux of ground water into SW-005		M g5 =	950.12439 (mg/s)	
mass flux of surface water into USGS Gage		M s6 =	1,866.86508 (mg/s)	
mass flux of ground water into USGS Gage		M g6 =	196.72179 (mg/s)	
mass flux of surface water into Colby Lake		M scl =	11,334.71600 (mg/s)	
mass flux of ground water into Colby Lake		M gcl =	489.71169 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP		M shl =	187.62900 (mg/s)	
Mass balance at each node	Average Flow			
	mass flux in river at SW-001	M r1 =	2,943.4593 (mg/s)	
	mass flux in river at SW-002	M r2 =	5,608.9585 (mg/s)	
	mass flux in river at SW-003	M r3 =	6,399.4818 (mg/s)	
	mass flux in river at SW-004	M r4 =	9,302.3599 (mg/s)	
	mass flux in river at SW-004A	M r4A =	21,182.3464 (mg/s)	
	mass flux in river at SW-005	M r5 =	39,508.4800 (mg/s)	
	mass flux in river at USGS Gage	M r6 =	41,572.0668 (mg/s)	
	mass flux into Colby Lake	M cl =	53,584.1235 (mg/s)	
Convert mass flux to concentration	Average Flow			
	concentration in river at SW-001	C r1 =	18.24591 (mg/L)	
	concentration in river at SW-002	C r2 =	17.57941 (mg/L)	
	concentration in river at SW-003	C r3 =	17.47468 (mg/L)	
	concentration in river at SW-004	C r4 =	17.23941 (mg/L)	
	concentration in river at SW-004A	C r4A =	17.13477 (mg/L)	
	concentration in river at SW-005	C r5 =	17.01060 (mg/L)	
	concentration in river at USGS Gage	C r6 =	16.99805 (mg/L)	
	concentration in Colby Lake	C cl =	16.97531 (mg/L)	

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case		Year 20	
Parameter		Cadmium	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0001 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0001 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0001 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0001 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0001 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0001 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0001 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0001 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0001 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0001 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0001 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0001 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0001 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0001 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0001 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0001 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0001 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0001 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0002 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0002 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0149 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0001 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0002 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0002 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0149 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0001 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0001 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0001 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0001 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0002 (mg/L)
		Average Flow	
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	0.01279 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00051 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.00283 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	0.01504 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.00073 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.00440 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00029 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.01618 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.00086 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00013 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00003 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00000 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	0.06555 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.00391 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.00004 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	0.10221 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.00642 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.01098 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.00133 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	0.06667 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.00331 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00110 (mg/s)
		Average Flow	
Mass balance at each node	mass flux in river at SW-001	M_r1 =	0.0161 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.0319 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.0366 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.0538 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.1233 (mg/s)
	mass flux in river at SW-005	M_r5 =	0.2319 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	0.2442 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	0.3153 (mg/s)
			Average Flow
	concentration in river at SW-001	C_r1 =	0.00010 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00010 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00010 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00010 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00010 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00010 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00010 (mg/L)
	concentration in Colby Lake	C_cl =	0.00010 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case	Year 20		
Parameter	Chloride		
Input concentration data	concentration of surface water into SW-001	C s1 =	8.0000 (mg/L)
	concentration of surface water into SW-002	C s2 =	8.0000 (mg/L)
	concentration of surface water into SW-003	C s3 =	8.0000 (mg/L)
	concentration of surface water into SW-004	C s4 =	8.0000 (mg/L)
	concentration of surface water into SW-004A	C s4A =	8.0000 (mg/L)
	concentration of surface water into SW-005	C s5 =	8.0000 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	8.0000 (mg/L)
	concentration of surface water into Colby Lake	C scl =	8.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	8.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	1.6000 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	6.6000 (mg/L)
	concentration of ground water into SW-002	C g2 =	6.6000 (mg/L)
	concentration of ground water into SW-003	C g3 =	6.6000 (mg/L)
	concentration of ground water into SW-004	C g4 =	6.6000 (mg/L)
	concentration of ground water into SW-004A	C g4A =	6.6000 (mg/L)
	concentration of ground water into SW-005	C g5 =	6.6000 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	6.6000 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	6.6000 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	- (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	97.2008 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	98.3723 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.7659 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	1.5943 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	5.3500 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	2.3300 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	- (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	97.2008 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	98.3723 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.7659 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	1.5943 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	5.3500 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	6.6000 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	6.6000 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	6.6000 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.9851 (mg/L)
	Average Flow		
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	1,023.42074 (mg/s)
	mass flux of ground water into SW-001	M g1 =	33.62040 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	45.28000 (mg/s)
	mass flux of surface water into SW-002	M s2 =	1,203.57645 (mg/s)
	mass flux of ground water into SW-002	M g2 =	48.14975 (mg/s)
	mass flux of surface water into SW-003	M s3 =	351.63158 (mg/s)
	mass flux of ground water into SW-003	M g3 =	19.00549 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep 003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3 003 =	0.11128 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO 00 =	0.01785 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s 003 =	0.00008 (mg/s)
	mass flux of surface water into SW-004	M s4 =	1,294.14983 (mg/s)
	mass flux of ground water into SW-004	M g4 =	56.74924 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep 004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3 004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO 00 =	0.01785 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00008 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00034 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	11.57812 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs 0 =	0.00008 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	2.86285 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00251 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00538 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00045 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	5,244.14497 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	257.97244 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	- (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	4.13828 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	8,176.94549 (mg/s)
	mass flux of ground water into SW-005	M g5 =	423.99060 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	878.52474 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	87.78660 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	5,333.98400 (mg/s)
mass flux of ground water into Colby Lake	M gcl =	218.53260 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	88.29600 (mg/s)	
Average Flow			
Mass balance at each node	mass flux in river at SW-001	M r1 =	1,102.3211 (mg/s)
	mass flux in river at SW-002	M r2 =	2,354.0473 (mg/s)
	mass flux in river at SW-003	M r3 =	2,724.8136 (mg/s)
	mass flux in river at SW-004	M r4 =	4,090.1804 (mg/s)
	mass flux in river at SW-004A	M r4A =	9,596.4360 (mg/s)
	mass flux in river at SW-005	M r5 =	18,197.3721 (mg/s)
	mass flux in river at USGS Gage	M r6 =	19,163.6835 (mg/s)
mass flux into Colby Lake	M cl =	24,804.4961 (mg/s)	
Average Flow			
Convert mass flux to concentration	concentration in river at SW-001	C r1 =	6.83307 (mg/L)
	concentration in river at SW-002	C r2 =	7.37798 (mg/L)
	concentration in river at SW-003	C r3 =	7.44049 (mg/L)
	concentration in river at SW-004	C r4 =	7.58004 (mg/L)
	concentration in river at SW-004A	C r4A =	7.76272 (mg/L)
	concentration in river at SW-005	C r5 =	7.83498 (mg/L)
	concentration in river at USGS Gage	C r6 =	7.83568 (mg/L)
	concentration in Colby Lake	C cl =	7.85800 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case	Year 20			
Parameter	Cobalt			
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0005 (mg/L)	
	concentration of surface water into SW-002	C_s2 =	0.0005 (mg/L)	
	concentration of surface water into SW-003	C_s3 =	0.0005 (mg/L)	
	concentration of surface water into SW-004	C_s4 =	0.0005 (mg/L)	
	concentration of surface water into SW-004A	C_s4A =	0.0005 (mg/L)	
	concentration of surface water into SW-005	C_s5 =	0.0005 (mg/L)	
	concentration of surface water into USGS Gage	C_s6 =	0.0005 (mg/L)	
	concentration of surface water into Colby Lake	C_scl =	0.0005 (mg/L)	
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0005 (mg/L)	
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0005 (mg/L)	
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)	
	concentration of ground water into SW-001	C_g1 =	0.0017 (mg/L)	
	concentration of ground water into SW-002	C_g2 =	0.0017 (mg/L)	
	concentration of ground water into SW-003	C_g3 =	0.0017 (mg/L)	
	concentration of ground water into SW-004	C_g4 =	0.0017 (mg/L)	
	concentration of ground water into SW-004A	C_g4A =	0.0017 (mg/L)	
	concentration of ground water into SW-005	C_g5 =	0.0017 (mg/L)	
	concentration of ground water into USGS Gage	C_g6 =	0.0017 (mg/L)	
	concentration of ground water into Colby Lake	C_gcl =	0.0017 (mg/L)	
	concentration of ground water seepage from East Pit	C_ggp =	#N/A (mg/L)	
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)	
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0339 (mg/L)	
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0494 (mg/L)	
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0520 (mg/L)	
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0520 (mg/L)	
	concentration of liner leakage from LOSP	C_gC4LO =	6.4318 (mg/L)	
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0011 (mg/L)	
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.0013 (mg/L)	
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0339 (mg/L)	
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0494 (mg/L)	
	concentration of liner leakage from Cat 3LO sumps	C_g3LOs =	0.0520 (mg/L)	
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0520 (mg/L)	
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	6.4318 (mg/L)	
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0011 (mg/L)	
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)	
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0017 (mg/L)	
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0017 (mg/L)	
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0017 (mg/L)	
	concentration of liner leakage from WWTF ponc	C_gWTFp =	0.0312 (mg/L)	
				Average Flow
	Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	0.06396 (mg/s)
mass flux of ground water into SW-001		M_g1 =	0.00841 (mg/s)	
mass flux of surface discharges from upstream of PM-1		M_sns =	0.01415 (mg/s)	
mass flux of surface water into SW-002		M_s2 =	0.07522 (mg/s)	
mass flux of ground water into SW-002		M_g2 =	0.01204 (mg/s)	
mass flux of surface water into SW-003		M_s3 =	0.02198 (mg/s)	
mass flux of ground water into SW-003		M_g3 =	0.00475 (mg/s)	
mass flux of seepage from East Pit to SW-003		M_ggp_003 =	#N/A (mg/s)	
mass flux of liner leakage from Cat 2/3 stockpile to SW-003		M_gC3_003 =	0.00006 (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-003		M_gC3LO_00 =	0.00001 (mg/s)	
mass flux of liner leakage from Cat 2/3 sumps to SW-003		M_gC3s_003 =	0.00000 (mg/s)	
mass flux of surface water into SW-004		M_s4 =	0.08088 (mg/s)	
mass flux of ground water into SW-004		M_g4 =	0.01419 (mg/s)	
mass flux of seepage from East Pit to SW-004		M_ggp_004 =	#N/A (mg/s)	
mass flux of seepage from West Pit		M_gwp =	#N/A (mg/s)	
mass flux of liner leakage from Cat 2/3 stockpile to SW-004		M_gC3_004 =	- (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-004		M_gC3LO_00 =	0.00001 (mg/s)	
mass flux of liner leakage from Cat 4 stockpile		M_gC4 =	0.00001 (mg/s)	
mass flux of liner leakage from LOSP		M_gC4LO =	0.00138 (mg/s)	
mass flux of seepage from Overburden (Storage)		M_gOS =	0.00240 (mg/s)	
mass flux of liner leakage from Cat 3LO sumps to SW-004		M_gC3LOs_0 =	0.00000 (mg/s)	
mass flux of liner leakage from Cat 4 sumps		M_gC4s =	0.00000 (mg/s)	
mass flux of liner leakage from LOSP sumps		M_gC4LOs =	0.00001 (mg/s)	
mass flux of seepage from Overburden Ponds - PW1		M_gOp1 =	0.00059 (mg/s)	
mass flux of leakage from Haul Road Pond - PW2		M_gHRp2 =	0.00000 (mg/s)	
mass flux of leakage from Haul Road Pond - PW4		M_gHRp4 =	0.00000 (mg/s)	
mass flux of leakage from RTH Pond - PW3		M_gRTHp =	0.00000 (mg/s)	
mass flux of liner leakage from WWTF pond		M_gWTFp =	0.00001 (mg/s)	
mass flux of surface water into SW-004A		M_s4A =	0.32776 (mg/s)	
mass flux of ground water into SW-004A		M_g4A =	0.06449 (mg/s)	
mass flux of West Pit overflow		M_sms =	#N/A (mg/s)	
mass flux of liner leakage from Cat 1 stockpile		M_gC12 =	0.00816 (mg/s)	
mass flux of liner leakage from Cat 1 sumps		M_gC12s =	0.00000 (mg/s)	
mass flux of seepage from Overburden (Cat 1)		M_gO12 =	0.00231 (mg/s)	
mass flux of seepage from Overburden Pond - PW7		M_gOp7 =	#N/A (mg/s)	
mass flux of surface water into SW-005		M_s5 =	0.51106 (mg/s)	
mass flux of ground water into SW-005		M_g5 =	0.10600 (mg/s)	
mass flux of surface water into USGS Gage		M_s6 =	0.05491 (mg/s)	
mass flux of ground water into USGS Gage		M_g6 =	0.02195 (mg/s)	
mass flux of surface water into Colby Lake		M_scl =	0.33337 (mg/s)	
mass flux of ground water into Colby Lake		M_gcl =	0.05463 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP		M_shl =	0.00552 (mg/s)	
			Average Flow	
Mass balance at each node	mass flux in river at SW-001	M_r1 =	0.0865 (mg/s)	
	mass flux in river at SW-002	M_r2 =	0.1738 (mg/s)	
	mass flux in river at SW-003	M_r3 =	0.2006 (mg/s)	
	mass flux in river at SW-004	M_r4 =	0.3001 (mg/s)	
	mass flux in river at SW-004A	M_r4A =	0.7028 (mg/s)	
	mass flux in river at SW-005	M_r5 =	1.3198 (mg/s)	
	mass flux in river at USGS Gage	M_r6 =	1.3967 (mg/s)	
mass flux into Colby Lake	M_cl =	1.7902 (mg/s)		
			Average Flow	
Convert mass flux to concentration	concentration in river at SW-001	C_r1 =	0.00054 (mg/L)	
	concentration in river at SW-002	C_r2 =	0.00054 (mg/L)	
	concentration in river at SW-003	C_r3 =	0.00055 (mg/L)	
	concentration in river at SW-004	C_r4 =	0.00056 (mg/L)	
	concentration in river at SW-004A	C_r4A =	0.00057 (mg/L)	
	concentration in river at SW-005	C_r5 =	0.00057 (mg/L)	
	concentration in river at USGS Gage	C_r6 =	0.00057 (mg/L)	
	concentration in Colby Lake	C_cl =	0.00057 (mg/L)	

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 20 Copper		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0017 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0017 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0017 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0017 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0017 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0017 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0017 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0017 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0190 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0012 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0030 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0030 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0030 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0030 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0030 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0030 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0030 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0030 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0920 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0920 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0920 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0920 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	1.5490 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0214 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.0170 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0920 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0920 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0920 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0920 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	1.5490 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0214 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0030 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0030 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0030 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.1862 (mg/L)
			Average Flow
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	0.21748 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.01503 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.03509 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	0.25576 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.02152 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.07472 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00849 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00011 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00002 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.27501 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.02537 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00002 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00001 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00033 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.04640 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.01147 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00009 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	1.11438 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.11531 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.02215 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.03019 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	1.73760 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.18951 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.18669 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.03924 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	1.13347 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.09768 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.20970 (mg/s)
			Average Flow
Mass balance at each node	mass flux in river at SW-001	M_r1 =	0.2676 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.5449 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.6282 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.9869 (mg/s)
	mass flux in river at SW-004A	M_r4A =	2.2689 (mg/s)
	mass flux in river at SW-005	M_r5 =	4.1961 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	4.4220 (mg/s)
	mass flux into Colby Lake	M_cl =	5.8628 (mg/s)
			Average Flow
Convert mass flux to concentration	concentration in river at SW-001	C_r1 =	0.00166 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00171 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00172 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00183 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00184 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00181 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00181 (mg/L)
	concentration in Colby Lake	C_cl =	0.00186 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case	Year 20			
Parameter	Fluoride			
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0700 (mg/L)	
	concentration of surface water into SW-002	C s2 =	0.0700 (mg/L)	
	concentration of surface water into SW-003	C s3 =	0.0700 (mg/L)	
	concentration of surface water into SW-004	C s4 =	0.0700 (mg/L)	
	concentration of surface water into SW-004A	C s4A =	0.0700 (mg/L)	
	concentration of surface water into SW-005	C s5 =	0.0700 (mg/L)	
	concentration of surface water into USGS Gage	C s6 =	0.0700 (mg/L)	
	concentration of surface water into Colby Lake	C scl =	0.0700 (mg/L)	
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0700 (mg/L)	
	concentration of surface water discharges from upstream of PM-1	C sns =	0.1400 (mg/L)	
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)	
	concentration of ground water into SW-001	C g1 =	0.2800 (mg/L)	
	concentration of ground water into SW-002	C g2 =	0.2800 (mg/L)	
	concentration of ground water into SW-003	C g3 =	0.2800 (mg/L)	
	concentration of ground water into SW-004	C g4 =	0.2800 (mg/L)	
	concentration of ground water into SW-004A	C g4A =	0.2800 (mg/L)	
	concentration of ground water into SW-005	C g5 =	0.2800 (mg/L)	
	concentration of ground water into USGS Gage	C g6 =	0.2800 (mg/L)	
	concentration of ground water into Colby Lake	C gcl =	0.2800 (mg/L)	
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)	
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)	
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.0621 (mg/L)	
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.0621 (mg/L)	
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0621 (mg/L)	
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0621 (mg/L)	
	concentration of liner leakage from LOSP	C gC4LO =	0.0622 (mg/L)	
	concentration of seepage from Overburden (Storage)	C gOS =	0.2239 (mg/L)	
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.4200 (mg/L)	
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.0621 (mg/L)	
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.0621 (mg/L)	
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.0621 (mg/L)	
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0621 (mg/L)	
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0622 (mg/L)	
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.2239 (mg/L)	
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)	
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.2800 (mg/L)	
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.2800 (mg/L)	
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.2800 (mg/L)	
	concentration of liner leakage from WWTF pond	C gWTFp =	0.2112 (mg/L)	
	Average Flow			
	Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	8.95493 (mg/s)
		mass flux of ground water into SW-001	M g1 =	1.42632 (mg/s)
		mass flux of surface discharges from upstream of PM-1	M sns =	3.96200 (mg/s)
		mass flux of surface water into SW-002	M s2 =	10.53129 (mg/s)
mass flux of ground water into SW-002		M g2 =	2.04272 (mg/s)	
mass flux of surface water into SW-003		M s3 =	3.07678 (mg/s)	
mass flux of ground water into SW-003		M g3 =	0.80629 (mg/s)	
mass flux of seepage from East Pit to SW-003		M gep_003 =	#N/A (mg/s)	
mass flux of liner leakage from Cat 2/3 stockpile to SW-003		M gC3_003 =	0.00007 (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-003		M gC3LO_00 =	0.00001 (mg/s)	
mass flux of liner leakage from Cat 2/3 sumps to SW-003		M gC3s_003 =	0.00000 (mg/s)	
mass flux of surface water into SW-004		M s4 =	11.32381 (mg/s)	
mass flux of ground water into SW-004		M g4 =	2.40754 (mg/s)	
mass flux of seepage from East Pit to SW-004		M gep_004 =	#N/A (mg/s)	
mass flux of seepage from West Pit		M gwp =	#N/A (mg/s)	
mass flux of liner leakage from Cat 2/3 stockpile to SW-004		M gC3_004 =	- (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-004		M gC3LO_00 =	0.00001 (mg/s)	
mass flux of liner leakage from Cat 4 stockpile		M gC4 =	0.00001 (mg/s)	
mass flux of liner leakage from LOSP		M gC4LO =	0.00001 (mg/s)	
mass flux of seepage from Overburden (Storage)		M gOS =	0.48453 (mg/s)	
mass flux of liner leakage from Cat 3LO sumps to SW-004		M gC3LOs_0 =	0.00000 (mg/s)	
mass flux of liner leakage from Cat 4 sumps		M gC4s =	0.00000 (mg/s)	
mass flux of liner leakage from LOSP sumps		M gC4LOs =	0.00000 (mg/s)	
mass flux of seepage from Overburden Ponds - PW1		M gOp1 =	0.11981 (mg/s)	
mass flux of leakage from Haul Road Pond - PW2		M gHRp2 =	0.00011 (mg/s)	
mass flux of leakage from Haul Road Pond - PW4		M gHRp4 =	0.00023 (mg/s)	
mass flux of leakage from RTH Pond - PW3		M gRTHp =	0.00000 (mg/s)	
mass flux of liner leakage from WWTF pond		M gWTFp =	0.00010 (mg/s)	
mass flux of surface water into SW-004A		M s4A =	45.88627 (mg/s)	
mass flux of ground water into SW-004A		M g4A =	10.94429 (mg/s)	
mass flux of West Pit overflow		M sms =	#N/A (mg/s)	
mass flux of liner leakage from Cat 1 stockpile		M gC12 =	0.01495 (mg/s)	
mass flux of liner leakage from Cat 1 sumps		M gC12s =	0.00000 (mg/s)	
mass flux of seepage from Overburden (Cat 1)		M gO12 =	0.74596 (mg/s)	
mass flux of seepage from Overburden Pond - PW7		M gOp7 =	#N/A (mg/s)	
mass flux of surface water into SW-005		M s5 =	71.54827 (mg/s)	
mass flux of ground water into SW-005		M g5 =	17.98748 (mg/s)	
mass flux of surface water into USGS Gage		M s6 =	7.68709 (mg/s)	
mass flux of ground water into USGS Gage		M g6 =	3.72428 (mg/s)	
mass flux of surface water into Colby Lake		M scl =	46.67236 (mg/s)	
mass flux of ground water into Colby Lake		M gcl =	9.27108 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP		M shl =	0.77259 (mg/s)	
Average Flow				
Mass balance at each node		mass flux in river at SW-001	M r1 =	14.3433 (mg/s)
	mass flux in river at SW-002	M r2 =	26.9173 (mg/s)	
	mass flux in river at SW-003	M r3 =	30.8004 (mg/s)	
	mass flux in river at SW-004	M r4 =	45.1366 (mg/s)	
	mass flux in river at SW-004A	M r4A =	102.7280 (mg/s)	
	mass flux in river at SW-005	M r5 =	192.2638 (mg/s)	
	mass flux in river at USGS Gage	M r6 =	203.6751 (mg/s)	
mass flux into Colby Lake	M cl =	260.3912 (mg/s)		
Average Flow				
Convert mass flux to concentration	concentration in river at SW-001	C r1 =	0.08891 (mg/L)	
	concentration in river at SW-002	C r2 =	0.08436 (mg/L)	
	concentration in river at SW-003	C r3 =	0.08410 (mg/L)	
	concentration in river at SW-004	C r4 =	0.08365 (mg/L)	
	concentration in river at SW-004A	C r4A =	0.08310 (mg/L)	
	concentration in river at SW-005	C r5 =	0.08278 (mg/L)	
	concentration in river at USGS Gage	C r6 =	0.08328 (mg/L)	
	concentration in Colby Lake	C cl =	0.08249 (mg/L)	



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 20 Iron		
Input concentration data	concentration of surface water into SW-001	C s1 =	1.6000 (mg/L)
	concentration of surface water into SW-002	C s2 =	1.6000 (mg/L)
	concentration of surface water into SW-003	C s3 =	1.6000 (mg/L)
	concentration of surface water into SW-004	C s4 =	1.6000 (mg/L)
	concentration of surface water into SW-004A	C s4A =	1.6000 (mg/L)
	concentration of surface water into SW-005	C s5 =	1.6000 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	1.6000 (mg/L)
	concentration of surface water into Colby Lake	C scl =	1.6000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	1.6000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0300 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	2.8440 (mg/L)
	concentration of ground water into SW-002	C g2 =	2.8440 (mg/L)
	concentration of ground water into SW-003	C g3 =	2.8440 (mg/L)
	concentration of ground water into SW-004	C g4 =	2.8440 (mg/L)
	concentration of ground water into SW-004A	C g4A =	2.8440 (mg/L)
	concentration of ground water into SW-005	C g5 =	2.8440 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	2.8440 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	2.8440 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.8100 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.8100 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.8100 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.8100 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	235.0000 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.2255 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.1500 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.8100 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.8100 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.8100 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.8100 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	235.0000 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.2255 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	2.8440 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	2.8440 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	2.8440 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.3790 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	204.68415 (mg/s)
	mass flux of ground water into SW-001	M g1 =	14.48734 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.84900 (mg/s)
	mass flux of surface water into SW-002	M s2 =	240.71529 (mg/s)
	mass flux of ground water into SW-002	M g2 =	20.74816 (mg/s)
	mass flux of surface water into SW-003	M s3 =	70.32632 (mg/s)
	mass flux of ground water into SW-003	M g3 =	8.18964 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.00093 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_00 =	0.00015 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	258.82997 (mg/s)
	mass flux of ground water into SW-004	M g4 =	24.45376 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_00 =	0.00015 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00009 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.05055 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.48801 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_0 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00031 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.12067 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00108 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00232 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00017 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	1,048.82899 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	111.16267 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	0.19502 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00002 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	0.26641 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	1,635.38910 (mg/s)
	mass flux of ground water into SW-005	M g5 =	182.70140 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	175.70495 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	37.82804 (mg/s)
mass flux of surface water into Colby Lake	M scl =	1,066.79680 (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	94.16768 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	17.65920 (mg/s)	
Mass balance at each node			Average Flow
	mass flux in river at SW-001	M r1 =	220.0205 (mg/s)
	mass flux in river at SW-002	M r2 =	481.4839 (mg/s)
	mass flux in river at SW-003	M r3 =	560.0010 (mg/s)
	mass flux in river at SW-004	M r4 =	843.9481 (mg/s)
	mass flux in river at SW-004A	M r4A =	2,004.4012 (mg/s)
	mass flux in river at SW-005	M r5 =	3,822.4917 (mg/s)
	mass flux in river at USGS Gage	M r6 =	4,036.0247 (mg/s)
mass flux into Colby Lake	M cl =	5,214.6483 (mg/s)	
Convert mass flux to concentration			Average Flow
	concentration in river at SW-001	C r1 =	1.36386 (mg/L)
	concentration in river at SW-002	C r2 =	1.50905 (mg/L)
	concentration in river at SW-003	C r3 =	1.52916 (mg/L)
	concentration in river at SW-004	C r4 =	1.56403 (mg/L)
	concentration in river at SW-004A	C r4A =	1.62139 (mg/L)
	concentration in river at SW-005	C r5 =	1.64580 (mg/L)
	concentration in river at USGS Gage	C r6 =	1.65026 (mg/L)
concentration in Colby Lake	C cl =	1.65199 (mg/L)	

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 20 Hardness		
Input concentration data	concentration of surface water into SW-001	C_s1 =	110.0000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	110.0000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	110.0000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	110.0000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	110.0000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	110.0000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	110.0000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	110.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	110.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	110.0000 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	66.4200 (mg/L)
	concentration of ground water into SW-002	C_g2 =	66.4200 (mg/L)
	concentration of ground water into SW-003	C_g3 =	66.4200 (mg/L)
	concentration of ground water into SW-004	C_g4 =	66.4200 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	66.4200 (mg/L)
	concentration of ground water into SW-005	C_g5 =	66.4200 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	66.4200 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	66.4200 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	1,729.3495 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	1,729.3495 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	1,729.3495 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	1,729.3495 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	4,495.6291 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	43.5200 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	71.5000 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	1,729.3495 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	1,729.3495 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	1,729.3495 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	1,729.3495 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	4,495.6291 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	43.5200 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	66.4200 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	66.4200 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	66.4200 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	493.7911 (mg/L)
Convert concentration to mass flux	Average Flow		
	mass flux of surface water into SW-001	M_s1 =	14,072.03511 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	338.34348 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	3,113.00000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	16,549.17621 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	484.56154 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	4,834.93429 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	191.26430 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	1.97991 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.31383 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00139 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	17,794.56019 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	571.10370 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.31383 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.18799 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.96713 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	94.18314 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00133 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00121 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00599 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	23.28806 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.02527 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.05414 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00002 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.22696 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	72,106.99328 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	2,596.14083 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	416.36226 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.03789 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	126.99004 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	112,433.00046 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	4,266.88722 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	12,079.71524 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	883.45242 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	73,342.28000 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	2,199.23262 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	1,214.07000 (mg/s)
Mass balance at each node	Average Flow		
	mass flux in river at SW-001	M_r1 =	17,523.3786 (mg/s)
	mass flux in river at SW-002	M_r2 =	34,557.1163 (mg/s)
	mass flux in river at SW-003	M_r3 =	39,585.6101 (mg/s)
	mass flux in river at SW-004	M_r4 =	58,070.5304 (mg/s)
	mass flux in river at SW-004A	M_r4A =	133,317.0547 (mg/s)
	mass flux in river at SW-005	M_r5 =	250,016.9424 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	262,980.1101 (mg/s)
Convert mass flux to concentration	Average Flow		
	concentration in river at SW-001	C_r1 =	108.62389 (mg/L)
	concentration in river at SW-002	C_r2 =	108.30777 (mg/L)
	concentration in river at SW-003	C_r3 =	108.09405 (mg/L)
	concentration in river at SW-004	C_r4 =	107.61802 (mg/L)
	concentration in river at SW-004A	C_r4A =	107.84248 (mg/L)
	concentration in river at SW-005	C_r5 =	107.64624 (mg/L)
	concentration in river at USGS Gage	C_r6 =	107.52772 (mg/L)
	concentration in Colby Lake	C_cl =	107.62737 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case	Year 20		
Parameter	Potassium		
Input concentration data	concentration of surface water into SW-001	C s1 =	1.3000 (mg/L)
	concentration of surface water into SW-002	C s2 =	1.3000 (mg/L)
	concentration of surface water into SW-003	C s3 =	1.3000 (mg/L)
	concentration of surface water into SW-004	C s4 =	1.3000 (mg/L)
	concentration of surface water into SW-004A	C s4A =	1.3000 (mg/L)
	concentration of surface water into SW-005	C s5 =	1.3000 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	1.3000 (mg/L)
	concentration of surface water into Colby Lake	C scl =	1.3000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	1.3000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	2.7000 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	1.7500 (mg/L)
	concentration of ground water into SW-002	C g2 =	1.7500 (mg/L)
	concentration of ground water into SW-003	C g3 =	1.7500 (mg/L)
	concentration of ground water into SW-004	C g4 =	1.7500 (mg/L)
	concentration of ground water into SW-004A	C g4A =	1.7500 (mg/L)
	concentration of ground water into SW-005	C g5 =	1.7500 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	1.7500 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	1.7500 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	49.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	49.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	49.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	49.0000 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	38.0000 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	2.2600 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	4.4500 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	49.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	49.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	49.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	49.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	38.0000 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	2.2600 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	1.7500 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	1.7500 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	1.7500 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	13.6661 (mg/L)
Average Flow			
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	166.30587 (mg/s)
	mass flux of ground water into SW-001	M g1 =	8.91450 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	76.41000 (mg/s)
	mass flux of surface water into SW-002	M s2 =	195.58117 (mg/s)
	mass flux of ground water into SW-002	M g2 =	12.76698 (mg/s)
	mass flux of surface water into SW-003	M s3 =	57.14013 (mg/s)
	mass flux of ground water into SW-003	M g3 =	5.03933 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.05610 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_00 =	0.00889 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00004 (mg/s)
	mass flux of surface water into SW-004	M s4 =	210.29935 (mg/s)
	mass flux of ground water into SW-004	M g4 =	15.04715 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_00 =	0.00889 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00533 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00817 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	4.89094 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_0 =	0.00004 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00003 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00005 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	1.20935 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00067 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00143 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00628 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	852.17356 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	68.40178 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	11.79736 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00107 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	7.90358 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	1,328.75364 (mg/s)
	mass flux of ground water into SW-005	M g5 =	112.42175 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	142.76027 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	23.27675 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	866.77240 (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	57.94425 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl =	14.34810 (mg/s)
Average Flow			
Mass balance at each node	mass flux in river at SW-001	M r1 =	251.6304 (mg/s)
	mass flux in river at SW-002	M r2 =	459.9785 (mg/s)
	mass flux in river at SW-003	M r3 =	522.2230 (mg/s)
	mass flux in river at SW-004	M r4 =	753.7007 (mg/s)
	mass flux in river at SW-004A	M r4A =	1,693.9781 (mg/s)
	mass flux in river at SW-005	M r5 =	3,135.1535 (mg/s)
	mass flux in river at USGS Gage	M r6 =	3,301.1905 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M cl =	4,240.2552 (mg/s)
Average Flow			
Convert mass flux to concentration	concentration in river at SW-001	C r1 =	1.55981 (mg/L)
	concentration in river at SW-002	C r2 =	1.44165 (mg/L)
	concentration in river at SW-003	C r3 =	1.42600 (mg/L)
	concentration in river at SW-004	C r4 =	1.39678 (mg/L)
	concentration in river at SW-004A	C r4A =	1.37029 (mg/L)
	concentration in river at SW-005	C r5 =	1.34986 (mg/L)
	concentration in river at USGS Gage	C r6 =	1.34980 (mg/L)
concentration in Colby Lake	C cl =	1.34330 (mg/L)	

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case		Year 20	
Parameter		Magnesium	
Input concentration data	concentration of surface water into SW-001	C_s1 =	8.0000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	8.0000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	8.0000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	8.0000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	8.0000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	8.0000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	8.0000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	8.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	8.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	10.5000 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	8.0200 (mg/L)
	concentration of ground water into SW-002	C_g2 =	8.0200 (mg/L)
	concentration of ground water into SW-003	C_g3 =	8.0200 (mg/L)
	concentration of ground water into SW-004	C_g4 =	8.0200 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	8.0200 (mg/L)
	concentration of ground water into SW-005	C_g5 =	8.0200 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	8.0200 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	8.0200 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	93.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	93.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	93.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	93.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	801.5650 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	4.8800 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	9.0100 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	93.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	93.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	93.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	93.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	801.5650 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	4.8800 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	8.0200 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	8.0200 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	8.0200 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	29.3035 (mg/L)
		Average Flow	
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	1,023.42074 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	40.85388 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	297.15000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	1,203.57645 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	58.50924 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	351.63158 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	23.09455 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.10647 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.01688 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00007 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	1,294.14983 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	68.95892 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.01688 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.01011 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.17244 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	10.56098 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00007 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00007 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00107 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	2.61135 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00305 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00654 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.01347 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	5,244.14497 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	313.47560 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	22.39090 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00204 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	16.00252 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	8,176.94549 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	515.21282 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	878.52474 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	106.67402 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	5,333.98400 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	265.55022 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	88.29600 (mg/s)
		Average Flow	
Mass balance at each node	mass flux in river at SW-001	M_r1 =	1,361.4248 (mg/s)
	mass flux in river at SW-002	M_r2 =	2,623.5103 (mg/s)
	mass flux in river at SW-003	M_r3 =	2,998.3599 (mg/s)
	mass flux in river at SW-004	M_r4 =	4,374.8647 (mg/s)
	mass flux in river at SW-004A	M_r4A =	9,970.8807 (mg/s)
	mass flux in river at SW-005	M_r5 =	18,663.0390 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	19,648.2378 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	25,336.0680 (mg/s)
			Average Flow
	concentration in river at SW-001	C_r1 =	8.43920 (mg/L)
	concentration in river at SW-002	C_r2 =	8.22252 (mg/L)
	concentration in river at SW-003	C_r3 =	8.18744 (mg/L)
	concentration in river at SW-004	C_r4 =	8.10763 (mg/L)
	concentration in river at SW-004A	C_r4A =	8.06562 (mg/L)
	concentration in river at SW-005	C_r5 =	8.03548 (mg/L)
	concentration in river at USGS Gage	C_r6 =	8.03380 (mg/L)
	concentration in Colby Lake	C_cl =	8.02640 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case		Year 20	
Parameter		Manganese	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.1500 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.1500 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.1500 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.1500 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.1500 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.1500 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.1500 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.1500 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.1500 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0086 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.1240 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.1240 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.1240 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.1240 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.1240 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.1240 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.1240 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.1240 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.5115 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.7453 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.7500 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.7500 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	16.4619 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.1604 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.1160 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.5115 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.7453 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.7500 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.7500 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	16.4619 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.1604 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.1240 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.1240 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.1240 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.2423 (mg/L)
		Average Flow	
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	19.18914 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.63166 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.24338 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	22.56706 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.90463 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	6.59309 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.35707 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00085 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00014 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	24.26531 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	1.06620 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00014 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00008 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00354 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.34711 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00002 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.08583 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00005 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00010 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00011 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	98.32772 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	4.84675 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.12315 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.20603 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	153.31773 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	7.96588 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	16.47234 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	1.64932 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	100.01220 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	4.10576 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	1.65555 (mg/s)
		Average Flow	
Mass balance at each node	mass flux in river at SW-001	M_r1 =	20.0642 (mg/s)
	mass flux in river at SW-002	M_r2 =	43.5369 (mg/s)
	mass flux in river at SW-003	M_r3 =	50.4870 (mg/s)
	mass flux in river at SW-004	M_r4 =	76.2565 (mg/s)
	mass flux in river at SW-004A	M_r4A =	179.7592 (mg/s)
	mass flux in river at SW-005	M_r5 =	341.0428 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	359.1644 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	464.9379 (mg/s)
			Average Flow
	concentration in river at SW-001	C_r1 =	0.12437 (mg/L)
	concentration in river at SW-002	C_r2 =	0.13645 (mg/L)
	concentration in river at SW-003	C_r3 =	0.13786 (mg/L)
	concentration in river at SW-004	C_r4 =	0.14132 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.14541 (mg/L)
	concentration in river at SW-005	C_r5 =	0.14684 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.14686 (mg/L)
	concentration in Colby Lake	C_cl =	0.14729 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case	Year 20			
Parameter	Sodium			
Input concentration data	concentration of surface water into SW-001	C s1 =	2.5000 (mg/L)	
	concentration of surface water into SW-002	C s2 =	2.5000 (mg/L)	
	concentration of surface water into SW-003	C s3 =	2.5000 (mg/L)	
	concentration of surface water into SW-004	C s4 =	2.5000 (mg/L)	
	concentration of surface water into SW-004A	C s4A =	2.5000 (mg/L)	
	concentration of surface water into SW-005	C s5 =	2.5000 (mg/L)	
	concentration of surface water into USGS Gage	C s6 =	2.5000 (mg/L)	
	concentration of surface water into Colby Lake	C scl =	2.5000 (mg/L)	
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	2.5000 (mg/L)	
	concentration of surface water discharges from upstream of PM-1	C sns =	4.8000 (mg/L)	
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)	
	concentration of ground water into SW-001	C g1 =	13.3300 (mg/L)	
	concentration of ground water into SW-002	C g2 =	13.3300 (mg/L)	
	concentration of ground water into SW-003	C g3 =	13.3300 (mg/L)	
	concentration of ground water into SW-004	C g4 =	13.3300 (mg/L)	
	concentration of ground water into SW-004A	C g4A =	13.3300 (mg/L)	
	concentration of ground water into SW-005	C g5 =	13.3300 (mg/L)	
	concentration of ground water into USGS Gage	C g6 =	13.3300 (mg/L)	
	concentration of ground water into Colby Lake	C gcl =	13.3300 (mg/L)	
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)	
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)	
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	349.3890 (mg/L)	
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	509.1252 (mg/L)	
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	671.7238 (mg/L)	
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	681.0000 (mg/L)	
	concentration of liner leakage from LOSP	C gC4LO =	100.5782 (mg/L)	
	concentration of seepage from Overburden (Storage)	C gOS =	4.6000 (mg/L)	
	concentration of seepage from Overburden (Cat 1)	C gO12 =	7.1900 (mg/L)	
	concentration of liner leakage from Cat 1 sumps	C gC12s =	349.3890 (mg/L)	
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	509.1252 (mg/L)	
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	671.7238 (mg/L)	
	concentration of liner leakage from Cat 4 sumps	C gC4s =	681.0000 (mg/L)	
	concentration of liner leakage from LOSP sumps	C gC4LOs =	100.5782 (mg/L)	
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	4.6000 (mg/L)	
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)	
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	13.3300 (mg/L)	
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	13.3300 (mg/L)	
	concentration of leakage from RTH Pond - PW3	C gRTHp =	13.3300 (mg/L)	
	concentration of liner leakage from WWTF ponc	C_gWTFp =	172.9501 (mg/L)	
				Average Flow
	Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	319.81898 (mg/s)
mass flux of ground water into SW-001		M g1 =	67.90302 (mg/s)	
mass flux of surface discharges from upstream of PM-1		M sns =	135.84000 (mg/s)	
mass flux of surface water into SW-002		M s2 =	376.11764 (mg/s)	
mass flux of ground water into SW-002		M g2 =	97.24790 (mg/s)	
mass flux of surface water into SW-003		M s3 =	109.88487 (mg/s)	
mass flux of ground water into SW-003		M g3 =	38.38532 (mg/s)	
mass flux of seepage from East Pit to SW-003		M gep 003 =	#N/A (mg/s)	
mass flux of liner leakage from Cat 2/3 stockpile to SW-003		M gC3 003 =	0.58289 (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-003		M gC3LO 00 =	0.12190 (mg/s)	
mass flux of liner leakage from Cat 2/3 sumps to SW-003		M gC3s 003 =	0.00041 (mg/s)	
mass flux of surface water into SW-004		M s4 =	404.42182 (mg/s)	
mass flux of ground water into SW-004		M g4 =	114.61626 (mg/s)	
mass flux of seepage from East Pit to SW-004		M gep 004 =	#N/A (mg/s)	
mass flux of seepage from West Pit		M gwp =	#N/A (mg/s)	
mass flux of liner leakage from Cat 2/3 stockpile to SW-004		M gC3 004 =	- (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-004		M gC3LO 00 =	0.12190 (mg/s)	
mass flux of liner leakage from Cat 4 stockpile		M gC4 =	0.07403 (mg/s)	
mass flux of liner leakage from LOSP		M gC4LO =	0.02164 (mg/s)	
mass flux of seepage from Overburden (Storage)		M gOS =	9.95502 (mg/s)	
mass flux of liner leakage from Cat 3LO sumps to SW-004		M gC3LOs 0 =	0.00052 (mg/s)	
mass flux of liner leakage from Cat 4 sumps		M gC4s =	0.00048 (mg/s)	
mass flux of liner leakage from LOSP sumps		M gC4LOs =	0.00013 (mg/s)	
mass flux of seepage from Overburden Ponds - PW1		M gOp1 =	2.46151 (mg/s)	
mass flux of leakage from Haul Road Pond - PW2		M gHRp2 =	0.00507 (mg/s)	
mass flux of leakage from Haul Road Pond - PW4		M gHRp4 =	0.01087 (mg/s)	
mass flux of leakage from RTH Pond - PW3		M gRTHp =	0.00000 (mg/s)	
mass flux of liner leakage from WWTF pond		M gWTFp =	0.07949 (mg/s)	
mass flux of surface water into SW-004A		M s4A =	1,638.79530 (mg/s)	
mass flux of ground water into SW-004A		M g4A =	521.02615 (mg/s)	
mass flux of West Pit overflow		M sms =	#N/A (mg/s)	
mass flux of liner leakage from Cat 1 stockpile		M gC12 =	84.11972 (mg/s)	
mass flux of liner leakage from Cat 1 sumps		M gC12s =	0.00766 (mg/s)	
mass flux of seepage from Overburden (Cat 1)		M gO12 =	12.77005 (mg/s)	
mass flux of seepage from Overburden Pond - PW7		M gOp7 =	#N/A (mg/s)	
mass flux of surface water into SW-005		M s5 =	2,555.29547 (mg/s)	
mass flux of ground water into SW-005		M g5 =	856.33253 (mg/s)	
mass flux of surface water into USGS Gage		M s6 =	274.53898 (mg/s)	
mass flux of ground water into USGS Gage		M g6 =	177.30233 (mg/s)	
mass flux of surface water into Colby Lake		M scl =	1,666.87000 (mg/s)	
mass flux of ground water into Colby Lake		M gcl =	441.36963 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP		M shl =	27.59250 (mg/s)	
			Average Flow	
Mass balance at each node	mass flux in river at SW-001	M r1 =	523.5620 (mg/s)	
	mass flux in river at SW-002	M r2 =	996.9275 (mg/s)	
	mass flux in river at SW-003	M r3 =	1,145.9029 (mg/s)	
	mass flux in river at SW-004	M r4 =	1,677.6721 (mg/s)	
	mass flux in river at SW-004A	M r4A =	3,934.3910 (mg/s)	
	mass flux in river at SW-005	M r5 =	7,346.0190 (mg/s)	
	mass flux in river at USGS Gage	M r6 =	7,797.8603 (mg/s)	
Convert mass flux to concentration	mass flux into Colby Lake	M cl =	9,933.6924 (mg/s)	
	concentration in river at SW-001	C r1 =	3.24546 (mg/L)	
	concentration in river at SW-002	C r2 =	3.12454 (mg/L)	
	concentration in river at SW-003	C r3 =	3.12905 (mg/L)	
	concentration in river at SW-004	C r4 =	3.10911 (mg/L)	
	concentration in river at SW-004A	C r4A =	3.18260 (mg/L)	
	concentration in river at SW-005	C r5 =	3.16287 (mg/L)	
	concentration in river at USGS Gage	C r6 =	3.18840 (mg/L)	
	concentration in Colby Lake	C cl =	3.14697 (mg/L)	



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case	Year 20			
Parameter	Nickel			
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0016 (mg/L)	
	concentration of surface water into SW-002	C_s2 =	0.0016 (mg/L)	
	concentration of surface water into SW-003	C_s3 =	0.0016 (mg/L)	
	concentration of surface water into SW-004	C_s4 =	0.0016 (mg/L)	
	concentration of surface water into SW-004A	C_s4A =	0.0016 (mg/L)	
	concentration of surface water into SW-005	C_s5 =	0.0016 (mg/L)	
	concentration of surface water into USGS Gage	C_s6 =	0.0016 (mg/L)	
	concentration of surface water into Colby Lake	C_scl =	0.0016 (mg/L)	
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0033 (mg/L)	
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0016 (mg/L)	
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)	
	concentration of ground water into SW-001	C_g1 =	0.0163 (mg/L)	
	concentration of ground water into SW-002	C_g2 =	0.0163 (mg/L)	
	concentration of ground water into SW-003	C_g3 =	0.0163 (mg/L)	
	concentration of ground water into SW-004	C_g4 =	0.0163 (mg/L)	
	concentration of ground water into SW-004A	C_g4A =	0.0163 (mg/L)	
	concentration of ground water into SW-005	C_g5 =	0.0163 (mg/L)	
	concentration of ground water into USGS Gage	C_g6 =	0.0163 (mg/L)	
	concentration of ground water into Colby Lake	C_gcl =	0.0163 (mg/L)	
	concentration of ground water seepage from East Pit	C_ggp =	#N/A (mg/L)	
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)	
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.2206 (mg/L)	
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.3215 (mg/L)	
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.4241 (mg/L)	
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.8600 (mg/L)	
	concentration of liner leakage from LOSP	C_gC4LO =	83.3285 (mg/L)	
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0080 (mg/L)	
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.0190 (mg/L)	
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.2206 (mg/L)	
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.3215 (mg/L)	
	concentration of liner leakage from Cat 3LO sumps	C_g3LOs =	0.4241 (mg/L)	
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.8600 (mg/L)	
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	83.3285 (mg/L)	
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0080 (mg/L)	
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)	
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0163 (mg/L)	
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0163 (mg/L)	
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0163 (mg/L)	
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.3548 (mg/L)	
			Average Flow	
	Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	0.19957 (mg/s)
mass flux of ground water into SW-001		M_g1 =	0.08293 (mg/s)	
mass flux of surface discharges from upstream of PM-1		M_sns =	0.04387 (mg/s)	
mass flux of surface water into SW-002		M_s2 =	0.23470 (mg/s)	
mass flux of ground water into SW-002		M_g2 =	0.11877 (mg/s)	
mass flux of surface water into SW-003		M_s3 =	0.06857 (mg/s)	
mass flux of ground water into SW-003		M_g3 =	0.04688 (mg/s)	
mass flux of seepage from East Pit to SW-003		M_ggp_003 =	#N/A (mg/s)	
mass flux of liner leakage from Cat 2/3 stockpile to SW-003		M_gC3_003 =	0.00037 (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-003		M_gC3LO_00 =	0.00008 (mg/s)	
mass flux of liner leakage from Cat 2/3 sumps to SW-003		M_gC3s_003 =	0.00000 (mg/s)	
mass flux of surface water into SW-004		M_s4 =	0.25236 (mg/s)	
mass flux of ground water into SW-004		M_g4 =	0.13998 (mg/s)	
mass flux of seepage from East Pit to SW-004		M_ggp_004 =	#N/A (mg/s)	
mass flux of seepage from West Pit		M_gwp =	#N/A (mg/s)	
mass flux of liner leakage from Cat 2/3 stockpile to SW-004		M_gC3_004 =	- (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-004		M_gC3LO_00 =	0.00008 (mg/s)	
mass flux of liner leakage from Cat 4 stockpile		M_gC4 =	0.00009 (mg/s)	
mass flux of liner leakage from LOSP		M_gC4LO =	0.01793 (mg/s)	
mass flux of seepage from Overburden (Storage)		M_gOS =	0.01725 (mg/s)	
mass flux of liner leakage from Cat 3LO sumps to SW-004		M_gC3LOs_0 =	0.00000 (mg/s)	
mass flux of liner leakage from Cat 4 sumps		M_gC4s =	0.00000 (mg/s)	
mass flux of liner leakage from LOSP sumps		M_gC4LOs =	0.00011 (mg/s)	
mass flux of seepage from Overburden Ponds - PW1		M_gOp1 =	0.00426 (mg/s)	
mass flux of leakage from Haul Road Pond - PW2		M_gHRp2 =	0.00001 (mg/s)	
mass flux of leakage from Haul Road Pond - PW4		M_gHRp4 =	0.00001 (mg/s)	
mass flux of leakage from RTH Pond - PW3		M_gRTHp =	0.00000 (mg/s)	
mass flux of liner leakage from WWTF pond		M_gWTFp =	0.00016 (mg/s)	
mass flux of surface water into SW-004A		M_s4A =	1.02261 (mg/s)	
mass flux of ground water into SW-004A		M_g4A =	0.63633 (mg/s)	
mass flux of West Pit overflow		M_sms =	#N/A (mg/s)	
mass flux of liner leakage from Cat 1 stockpile		M_gC12 =	0.05311 (mg/s)	
mass flux of liner leakage from Cat 1 sumps		M_gC12s =	0.00000 (mg/s)	
mass flux of seepage from Overburden (Cat 1)		M_gO12 =	0.03375 (mg/s)	
mass flux of seepage from Overburden Pond - PW7		M_gOp7 =	#N/A (mg/s)	
mass flux of surface water into SW-005		M_s5 =	1.59450 (mg/s)	
mass flux of ground water into SW-005		M_g5 =	1.04584 (mg/s)	
mass flux of surface water into USGS Gage		M_s6 =	0.17131 (mg/s)	
mass flux of ground water into USGS Gage		M_g6 =	0.21654 (mg/s)	
mass flux of surface water into Colby Lake		M_scl =	1.04013 (mg/s)	
mass flux of ground water into Colby Lake		M_gcl =	0.53905 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP		M_shl =	0.03642 (mg/s)	
		Average Flow		
Mass balance at each node	mass flux in river at SW-001	M_r1 =	0.3264 (mg/s)	
	mass flux in river at SW-002	M_r2 =	0.6798 (mg/s)	
	mass flux in river at SW-003	M_r3 =	0.7957 (mg/s)	
	mass flux in river at SW-004	M_r4 =	1.2280 (mg/s)	
	mass flux in river at SW-004A	M_r4A =	2.9738 (mg/s)	
	mass flux in river at SW-005	M_r5 =	5.6141 (mg/s)	
	mass flux in river at USGS Gage	M_r6 =	6.0020 (mg/s)	
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	7.6176 (mg/s)	
	concentration in river at SW-001	C_r1 =	0.00202 (mg/L)	
	concentration in river at SW-002	C_r2 =	0.00213 (mg/L)	
	concentration in river at SW-003	C_r3 =	0.00217 (mg/L)	
	concentration in river at SW-004	C_r4 =	0.00228 (mg/L)	
	concentration in river at SW-004A	C_r4A =	0.00241 (mg/L)	
	concentration in river at SW-005	C_r5 =	0.00242 (mg/L)	
	concentration in river at USGS Gage	C_r6 =	0.00245 (mg/L)	
	concentration in Colby Lake	C_cl =	0.00241 (mg/L)	

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 20 Lead			
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0005 (mg/L)	
	concentration of surface water into SW-002	C s2 =	0.0005 (mg/L)	
	concentration of surface water into SW-003	C s3 =	0.0005 (mg/L)	
	concentration of surface water into SW-004	C s4 =	0.0005 (mg/L)	
	concentration of surface water into SW-004A	C s4A =	0.0005 (mg/L)	
	concentration of surface water into SW-005	C s5 =	0.0005 (mg/L)	
	concentration of surface water into USGS Gage	C s6 =	0.0005 (mg/L)	
	concentration of surface water into Colby Lake	C scl =	0.0005 (mg/L)	
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0005 (mg/L)	
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0002 (mg/L)	
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)	
	concentration of ground water into SW-001	C g1 =	0.0011 (mg/L)	
	concentration of ground water into SW-002	C g2 =	0.0011 (mg/L)	
	concentration of ground water into SW-003	C g3 =	0.0011 (mg/L)	
	concentration of ground water into SW-004	C g4 =	0.0011 (mg/L)	
	concentration of ground water into SW-004A	C g4A =	0.0011 (mg/L)	
	concentration of ground water into SW-005	C g5 =	0.0011 (mg/L)	
	concentration of ground water into USGS Gage	C g6 =	0.0011 (mg/L)	
	concentration of ground water into Colby Lake	C gcl =	0.0011 (mg/L)	
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)	
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)	
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.0264 (mg/L)	
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.0385 (mg/L)	
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0508 (mg/L)	
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0528 (mg/L)	
	concentration of liner leakage from LOSP	C gC4LO =	0.0528 (mg/L)	
	concentration of seepage from Overburden (Storage)	C gOS =	0.0007 (mg/L)	
	concentration of seepage from Overburden (Cat 1)	C gO12 =	- (mg/L)	
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.0264 (mg/L)	
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.0385 (mg/L)	
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.0508 (mg/L)	
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0528 (mg/L)	
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0528 (mg/L)	
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0007 (mg/L)	
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)	
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0011 (mg/L)	
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0011 (mg/L)	
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0011 (mg/L)	
	concentration of liner leakage from WWTF pond	C gWTFp =	0.0140 (mg/L)	
	Average Flow			
	Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	0.06396 (mg/s)
		mass flux of ground water into SW-001	M g1 =	0.00571 (mg/s)
mass flux of surface discharges from upstream of PM-1		M sns =	0.00425 (mg/s)	
mass flux of surface water into SW-002		M s2 =	0.07522 (mg/s)	
mass flux of ground water into SW-002		M g2 =	0.00817 (mg/s)	
mass flux of surface water into SW-003		M s3 =	0.02198 (mg/s)	
mass flux of ground water into SW-003		M g3 =	0.00323 (mg/s)	
mass flux of seepage from East Pit to SW-003		M gep_003 =	#N/A (mg/s)	
mass flux of liner leakage from Cat 2/3 stockpile to SW-003		M gC3_003 =	0.00004 (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-003		M gC3LO_00 =	0.00001 (mg/s)	
mass flux of liner leakage from Cat 2/3 sumps to SW-003		M gC3s_003 =	0.00000 (mg/s)	
mass flux of surface water into SW-004		M s4 =	0.08088 (mg/s)	
mass flux of ground water into SW-004		M g4 =	0.00963 (mg/s)	
mass flux of seepage from East Pit to SW-004		M gep_004 =	#N/A (mg/s)	
mass flux of seepage from West Pit		M gwp =	#N/A (mg/s)	
mass flux of liner leakage from Cat 2/3 stockpile to SW-004		M gC3_004 =	- (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-004		M gC3LO_00 =	0.00001 (mg/s)	
mass flux of liner leakage from Cat 4 stockpile		M gC4 =	0.00001 (mg/s)	
mass flux of liner leakage from LOSP		M gC4LO =	0.00001 (mg/s)	
mass flux of seepage from Overburden (Storage)		M gOS =	0.00146 (mg/s)	
mass flux of liner leakage from Cat 3LO sumps to SW-004		M gC3LOs_0 =	0.00000 (mg/s)	
mass flux of liner leakage from Cat 4 sumps		M gC4s =	0.00000 (mg/s)	
mass flux of liner leakage from LOSP sumps		M gC4LOs =	0.00000 (mg/s)	
mass flux of seepage from Overburden Ponds - PW1		M gOp1 =	0.00036 (mg/s)	
mass flux of leakage from Haul Road Pond - PW2		M gHRp2 =	0.00000 (mg/s)	
mass flux of leakage from Haul Road Pond - PW4		M gHRp4 =	0.00000 (mg/s)	
mass flux of leakage from RTH Pond - PW3		M gRTHp =	0.00000 (mg/s)	
mass flux of liner leakage from WWTF pond		M gWTFp =	0.00001 (mg/s)	
mass flux of surface water into SW-004A		M s4A =	0.32776 (mg/s)	
mass flux of ground water into SW-004A		M g4A =	0.04378 (mg/s)	
mass flux of West Pit overflow		M sms =	#N/A (mg/s)	
mass flux of liner leakage from Cat 1 stockpile		M gC12 =	0.00636 (mg/s)	
mass flux of liner leakage from Cat 1 sumps		M gC12s =	0.00000 (mg/s)	
mass flux of seepage from Overburden (Cat 1)		M gO12 =	- (mg/s)	
mass flux of seepage from Overburden Pond - PW7		M gOp7 =	#N/A (mg/s)	
mass flux of surface water into SW-005		M s5 =	0.51106 (mg/s)	
mass flux of ground water into SW-005		M g5 =	0.07195 (mg/s)	
mass flux of surface water into USGS Gage		M s6 =	0.05491 (mg/s)	
mass flux of ground water into USGS Gage		M g6 =	0.01490 (mg/s)	
mass flux of surface water into Colby Lake		M scl =	0.33337 (mg/s)	
mass flux of ground water into Colby Lake		M gcl =	0.03708 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP		M shl =	0.00552 (mg/s)	
Average Flow				
Mass balance at each node	mass flux in river at SW-001	M r1 =	0.0739 (mg/s)	
	mass flux in river at SW-002	M r2 =	0.1573 (mg/s)	
	mass flux in river at SW-003	M r3 =	0.1826 (mg/s)	
	mass flux in river at SW-004	M r4 =	0.2749 (mg/s)	
	mass flux in river at SW-004A	M r4A =	0.6528 (mg/s)	
	mass flux in river at SW-005	M r5 =	1.2358 (mg/s)	
	mass flux in river at USGS Gage	M r6 =	1.3056 (mg/s)	
mass flux into Colby Lake	M cl =	1.6816 (mg/s)		
Average Flow				
Convert mass flux to concentration	concentration in river at SW-001	C r1 =	0.00046 (mg/L)	
	concentration in river at SW-002	C r2 =	0.00049 (mg/L)	
	concentration in river at SW-003	C r3 =	0.00050 (mg/L)	
	concentration in river at SW-004	C r4 =	0.00051 (mg/L)	
	concentration in river at SW-004A	C r4A =	0.00053 (mg/L)	
	concentration in river at SW-005	C r5 =	0.00053 (mg/L)	
	concentration in river at USGS Gage	C r6 =	0.00053 (mg/L)	
	concentration in Colby Lake	C cl =	0.00053 (mg/L)	

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case	Year 20		
Parameter	Antimony		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0015 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0015 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0015 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0015 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0015 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0015 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0015 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0015 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0015 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0015 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0015 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0015 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0015 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0015 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0015 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0015 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0015 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0015 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.0800 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.0800 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0800 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0800 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.0484 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0003 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.0004 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.0800 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.0800 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.0800 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0800 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0484 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0003 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0015 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0015 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0015 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0262 (mg/L)
		Average Flow	
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	0.19189 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.00764 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.04245 (mg/s)
	mass flux of surface water into SW-002	M s2 =	0.22567 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.01094 (mg/s)
	mass flux of surface water into SW-003	M s3 =	0.06593 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.00432 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep 003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3 003 =	0.00009 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO 00 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s 003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	0.24265 (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.01290 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep 004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3 004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO 00 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00001 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.00065 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs 0 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.00016 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00001 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	0.98328 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.05863 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	0.01926 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	0.00071 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	1.53318 (mg/s)
	mass flux of ground water into SW-005	M g5 =	0.09636 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	0.16472 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.01995 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	1.00012 (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	0.04967 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.01656 (mg/s)
		Average Flow	
Mass balance at each node	mass flux in river at SW-001	M r1 =	0.2420 (mg/s)
	mass flux in river at SW-002	M r2 =	0.4786 (mg/s)
	mass flux in river at SW-003	M r3 =	0.5490 (mg/s)
	mass flux in river at SW-004	M r4 =	0.8054 (mg/s)
	mass flux in river at SW-004A	M r4A =	1.8672 (mg/s)
	mass flux in river at SW-005	M r5 =	3.4968 (mg/s)
	mass flux in river at USGS Gage	M r6 =	3.6815 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M cl =	4.7478 (mg/s)
		Average Flow	
Convert mass flux to concentration	concentration in river at SW-001	C r1 =	0.00150 (mg/L)
	concentration in river at SW-002	C r2 =	0.00150 (mg/L)
	concentration in river at SW-003	C r3 =	0.00150 (mg/L)
	concentration in river at SW-004	C r4 =	0.00149 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00151 (mg/L)
	concentration in river at SW-005	C r5 =	0.00151 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00151 (mg/L)
	concentration in Colby Lake	C cl =	0.00150 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case		Year 20	
Parameter		Selenium	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0005 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0005 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0005 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0005 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0005 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0005 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0005 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0005 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0005 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0005 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0019 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0019 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0019 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0019 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0019 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0019 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0019 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0019 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0029 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0029 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0029 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0029 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0029 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0004 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.0019 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0029 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0029 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0029 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0029 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0029 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0004 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0019 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0019 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0019 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0022 (mg/L)
		Average Flow	
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	0.06396 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00973 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.01415 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	0.07522 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.01393 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.02198 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00550 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.08088 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.01642 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00096 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00024 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00000 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	0.32776 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.07466 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.00070 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.00337 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	0.51106 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.12270 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.05491 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.02540 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	0.33337 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.06324 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00552 (mg/s)
		Average Flow	
Mass balance at each node	mass flux in river at SW-001	M_r1 =	0.0878 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.1770 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.2045 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.3030 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.7095 (mg/s)
	mass flux in river at SW-005	M_r5 =	1.3432 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	1.4236 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	1.8257 (mg/s)
Convert mass flux to concentration	concentration in river at SW-001	C_r1 =	0.00054 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00055 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00056 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00056 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00057 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00058 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00058 (mg/L)
Concentration in Colby Lake	concentration in Colby Lake	C_cl =	0.00058 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case	Year 20		
Parameter	Sulfate		
Input concentration data	concentration of surface water into SW-001	C s1 =	9.0000 (mg/L)
	concentration of surface water into SW-002	C s2 =	9.0000 (mg/L)
	concentration of surface water into SW-003	C s3 =	9.0000 (mg/L)
	concentration of surface water into SW-004	C s4 =	9.0000 (mg/L)
	concentration of surface water into SW-004A	C s4A =	9.0000 (mg/L)
	concentration of surface water into SW-005	C s5 =	9.0000 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	9.0000 (mg/L)
	concentration of surface water into Colby Lake	C scl =	9.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	22.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	22.0000 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	16.1300 (mg/L)
	concentration of ground water into SW-002	C g2 =	16.1300 (mg/L)
	concentration of ground water into SW-003	C g3 =	16.1300 (mg/L)
	concentration of ground water into SW-004	C g4 =	16.1300 (mg/L)
	concentration of ground water into SW-004A	C g4A =	16.1300 (mg/L)
	concentration of ground water into SW-005	C g5 =	16.1300 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	16.1300 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	16.1300 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	854.3331 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	1,244.9234 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	1,642.5130 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	2,340.0000 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	9,600.0000 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	35.1700 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	68.3000 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	854.3331 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	1,244.9234 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	1,642.5130 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	2,340.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	9,600.0000 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	35.1700 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	16.1300 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	16.1300 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	16.1300 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	490.1065 (mg/L)
		Average Flow	
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	1,151.34833 (mg/s)
	mass flux of ground water into SW-001	M g1 =	82.16622 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	622.60000 (mg/s)
	mass flux of surface water into SW-002	M s2 =	1,354.02351 (mg/s)
	mass flux of ground water into SW-002	M g2 =	117.67506 (mg/s)
	mass flux of surface water into SW-003	M s3 =	395.58553 (mg/s)
	mass flux of ground water into SW-003	M g3 =	46.44826 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	1,42530 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_00 =	0.29807 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00100 (mg/s)
	mass flux of surface water into SW-004	M s4 =	1,455.91856 (mg/s)
	mass flux of ground water into SW-004	M g4 =	138.69170 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_00 =	0.29807 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.25437 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	2.06522 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	76.11262 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_0 =	0.00127 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00164 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.01279 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	18.81988 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00614 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.01315 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.22527 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	5,899.66309 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	630.46901 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	205.69127 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.01872 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	121.30657 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	9,199.06367 (mg/s)
	mass flux of ground water into SW-005	M g5 =	1,036.20733 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	988.34034 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	214.54513 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	6,000.73200 (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	534.08043 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl =	99.33300 (mg/s)
		Average Flow	
Mass balance at each node	mass flux in river at SW-001	M r1 =	1,856.1145 (mg/s)
	mass flux in river at SW-002	M r2 =	3,327.8131 (mg/s)
	mass flux in river at SW-003	M r3 =	3,771.5713 (mg/s)
	mass flux in river at SW-004	M r4 =	5,463.9930 (mg/s)
	mass flux in river at SW-004A	M r4A =	12,321.1416 (mg/s)
	mass flux in river at SW-005	M r5 =	22,556.4126 (mg/s)
	mass flux in river at USGS Gage	M r6 =	23,759.2961 (mg/s)
mass flux into Colby Lake	M cl =	30,393.4435 (mg/s)	
		Average Flow	
Convert mass flux to concentration	concentration in river at SW-001	C r1 =	11.50568 (mg/L)
	concentration in river at SW-002	C r2 =	10.42992 (mg/L)
	concentration in river at SW-003	C r3 =	10.29880 (mg/L)
	concentration in river at SW-004	C r4 =	10.12603 (mg/L)
	concentration in river at SW-004A	C r4A =	9.96678 (mg/L)
	concentration in river at SW-005	C r5 =	9.71179 (mg/L)
	concentration in river at USGS Gage	C r6 =	9.71474 (mg/L)
	concentration in Colby Lake	C cl =	9.62856 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case		Year 20	
Parameter	Thallium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0004 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0004 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0004 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0004 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0004 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0004 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0004 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0004 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0004 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0003 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0000 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0000 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0000 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0000 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0000 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0000 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0000 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0000 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0000 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0001 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0000 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0001 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0000 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0000 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0000 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0000 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0012 (mg/L)
		Average Flow	
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	0.05117 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00002 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.00809 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	0.06018 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.00003 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.01758 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00001 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.06471 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.00003 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00009 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00002 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00000 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	0.26221 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.00016 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	0.40885 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.00026 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.04393 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.00005 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	0.26670 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.00013 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00441 (mg/s)
		Average Flow	
Mass balance at each node	mass flux in river at SW-001	M_r1 =	0.0593 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.1195 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.1371 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.2019 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.4643 (mg/s)
	mass flux in river at SW-005	M_r5 =	0.8734 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	0.9174 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	1.1886 (mg/s)
			Average Flow
	concentration in river at SW-001	C_r1 =	0.00037 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00037 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00037 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00037 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00038 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00038 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00038 (mg/L)
	concentration in Colby Lake	C_cl =	0.00038 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case		Year 20	
Parameter		Vanadium	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0009 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0009 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0009 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0009 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0009 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0009 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0009 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0009 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0009 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0043 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0043 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0043 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0043 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0043 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0043 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0043 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0043 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0043 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.1317 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.1919 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.2532 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.4457 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0248 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0017 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.0014 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.1317 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.1919 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.2532 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.4457 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0248 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0017 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0043 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0043 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0043 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0719 (mg/L)
		Average Flow	
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	0.11513 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.02190 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.12169 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	0.13540 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.03137 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.03956 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.01238 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00022 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00005 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.14559 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.03697 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00005 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00005 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00374 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00093 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00003 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	0.58997 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.16807 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.03171 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.00249 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	0.91991 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.27624 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.09883 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.05719 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	0.60007 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.14238 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00993 (mg/s)
		Average Flow	
Mass balance at each node	mass flux in river at SW-001	M_r1 =	0.2587 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.4265 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.4777 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.8651 (mg/s)
	mass flux in river at SW-004A	M_r4A =	1.4573 (mg/s)
	mass flux in river at SW-005	M_r5 =	2.6535 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	2.8095 (mg/s)
	mass flux into Colby Lake	M_cl =	3.5619 (mg/s)
		Average Flow	
Convert mass flux to concentration	concentration in river at SW-001	C_r1 =	0.00160 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00133 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00130 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00123 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00118 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00114 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00115 (mg/L)
	concentration in Colby Lake	C_cl =	0.00113 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case	Year 20			
Parameter	Zinc			
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0160 (mg/L)	
	concentration of surface water into SW-002	C_s2 =	0.0160 (mg/L)	
	concentration of surface water into SW-003	C_s3 =	0.0160 (mg/L)	
	concentration of surface water into SW-004	C_s4 =	0.0160 (mg/L)	
	concentration of surface water into SW-004A	C_s4A =	0.0160 (mg/L)	
	concentration of surface water into SW-005	C_s5 =	0.0160 (mg/L)	
	concentration of surface water into USGS Gage	C_s6 =	0.0160 (mg/L)	
	concentration of surface water into Colby Lake	C_scl =	0.0160 (mg/L)	
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0620 (mg/L)	
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0073 (mg/L)	
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)	
	concentration of ground water into SW-001	C_g1 =	0.0275 (mg/L)	
	concentration of ground water into SW-002	C_g2 =	0.0275 (mg/L)	
	concentration of ground water into SW-003	C_g3 =	0.0275 (mg/L)	
	concentration of ground water into SW-004	C_g4 =	0.0275 (mg/L)	
	concentration of ground water into SW-004A	C_g4A =	0.0275 (mg/L)	
	concentration of ground water into SW-005	C_g5 =	0.0275 (mg/L)	
	concentration of ground water into USGS Gage	C_g6 =	0.0275 (mg/L)	
	concentration of ground water into Colby Lake	C_gcl =	0.0275 (mg/L)	
	concentration of ground water seepage from East Pit	C_ggp =	#N/A (mg/L)	
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)	
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0900 (mg/L)	
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0900 (mg/L)	
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0900 (mg/L)	
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0900 (mg/L)	
	concentration of liner leakage from LOSP	C_gC4LO =	26.0000 (mg/L)	
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0046 (mg/L)	
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.0030 (mg/L)	
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0900 (mg/L)	
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0900 (mg/L)	
	concentration of liner leakage from Cat 3LO sumps	C_g3LOs =	0.0900 (mg/L)	
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0900 (mg/L)	
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	26.0000 (mg/L)	
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0046 (mg/L)	
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)	
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0275 (mg/L)	
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0275 (mg/L)	
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0275 (mg/L)	
	concentration of liner leakage from WWTF ponc	C_gWTFp =	0.0505 (mg/L)	
			Average Flow	
	Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	2.04684 (mg/s)
mass flux of ground water into SW-001		M_g1 =	0.14009 (mg/s)	
mass flux of surface discharges from upstream of PM-1		M_sns =	0.20744 (mg/s)	
mass flux of surface water into SW-002		M_s2 =	2.40715 (mg/s)	
mass flux of ground water into SW-002		M_g2 =	0.20062 (mg/s)	
mass flux of surface water into SW-003		M_s3 =	0.70326 (mg/s)	
mass flux of ground water into SW-003		M_g3 =	0.07919 (mg/s)	
mass flux of seepage from East Pit to SW-003		M_ggp_003 =	#N/A (mg/s)	
mass flux of liner leakage from Cat 2/3 stockpile to SW-003		M_gC3_003 =	0.00010 (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-003		M_gC3LO_00 =	0.00002 (mg/s)	
mass flux of liner leakage from Cat 2/3 sumps to SW-003		M_gC3s_003 =	0.00000 (mg/s)	
mass flux of surface water into SW-004		M_s4 =	2.58830 (mg/s)	
mass flux of ground water into SW-004		M_g4 =	0.23646 (mg/s)	
mass flux of seepage from East Pit to SW-004		M_ggp_004 =	#N/A (mg/s)	
mass flux of seepage from West Pit		M_gwp =	#N/A (mg/s)	
mass flux of liner leakage from Cat 2/3 stockpile to SW-004		M_gC3_004 =	- (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-004		M_gC3LO_00 =	0.00002 (mg/s)	
mass flux of liner leakage from Cat 4 stockpile		M_gC4 =	0.00001 (mg/s)	
mass flux of liner leakage from LOSP		M_gC4LO =	0.00559 (mg/s)	
mass flux of seepage from Overburden (Storage)		M_gOS =	0.00987 (mg/s)	
mass flux of liner leakage from Cat 3LO sumps to SW-004		M_gC3LOs_0 =	0.00000 (mg/s)	
mass flux of liner leakage from Cat 4 sumps		M_gC4s =	0.00000 (mg/s)	
mass flux of liner leakage from LOSP sumps		M_gC4LOs =	0.00003 (mg/s)	
mass flux of seepage from Overburden Ponds - PW1		M_gOp1 =	0.00244 (mg/s)	
mass flux of leakage from Haul Road Pond - PW2		M_gHRp2 =	0.00001 (mg/s)	
mass flux of leakage from Haul Road Pond - PW4		M_gHRp4 =	0.00002 (mg/s)	
mass flux of leakage from RTH Pond - PW3		M_gRTHp =	0.00000 (mg/s)	
mass flux of liner leakage from WWTF pond		M_gWTFp =	0.00002 (mg/s)	
mass flux of surface water into SW-004A		M_s4A =	10.48829 (mg/s)	
mass flux of ground water into SW-004A		M_g4A =	1.07489 (mg/s)	
mass flux of West Pit overflow		M_sms =	#N/A (mg/s)	
mass flux of liner leakage from Cat 1 stockpile		M_gC12 =	0.02167 (mg/s)	
mass flux of liner leakage from Cat 1 sumps		M_gC12s =	0.00000 (mg/s)	
mass flux of seepage from Overburden (Cat 1)		M_gO12 =	0.00533 (mg/s)	
mass flux of seepage from Overburden Pond - PW7		M_gOp7 =	#N/A (mg/s)	
mass flux of surface water into SW-005		M_s5 =	16.35389 (mg/s)	
mass flux of ground water into SW-005		M_g5 =	1.76663 (mg/s)	
mass flux of surface water into USGS Gage		M_s6 =	1.75705 (mg/s)	
mass flux of ground water into USGS Gage		M_g6 =	0.36578 (mg/s)	
mass flux of surface water into Colby Lake		M_scl =	10.66797 (mg/s)	
mass flux of ground water into Colby Lake		M_gcl =	0.91055 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP		M_shl =	0.68429 (mg/s)	
		Average Flow		
Mass balance at each node	mass flux in river at SW-001	M_r1 =	2.3944 (mg/s)	
	mass flux in river at SW-002	M_r2 =	5.0021 (mg/s)	
	mass flux in river at SW-003	M_r3 =	5.7847 (mg/s)	
	mass flux in river at SW-004	M_r4 =	8.6275 (mg/s)	
	mass flux in river at SW-004A	M_r4A =	20.2177 (mg/s)	
	mass flux in river at SW-005	M_r5 =	38.3362 (mg/s)	
	mass flux in river at USGS Gage	M_r6 =	40.4610 (mg/s)	
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	52.7238 (mg/s)	
		Average Flow		
Convert mass flux to concentration	concentration in river at SW-001	C_r1 =	0.01484 (mg/L)	
	concentration in river at SW-002	C_r2 =	0.01568 (mg/L)	
	concentration in river at SW-003	C_r3 =	0.01580 (mg/L)	
	concentration in river at SW-004	C_r4 =	0.01599 (mg/L)	
	concentration in river at SW-004A	C_r4A =	0.01635 (mg/L)	
	concentration in river at SW-005	C_r5 =	0.01651 (mg/L)	
	concentration in river at USGS Gage	C_r6 =	0.01654 (mg/L)	
concentration in Colby Lake	C_cl =	0.01670 (mg/L)		

## Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

### FLOWS

Case Flow	Year 20 High Flow Conditions (10-yr, 24-hr rainfall event)			
Total flow in Partridge River	flow in river at SW-001	Q_r1_H =	85.35	(cfs)
	flow in river at SW-002	Q_r2_H =	172.44	(cfs)
	flow in river at SW-003	Q_r3_H =	227.98	(cfs)
	flow in river at SW-004	Q_r4_H =	283.61	(cfs)
	flow in river at SW-004A	Q_r4a_H =	916.94	(cfs)
	flow in river at SW-005	Q_r5_H =	1,082.89	(cfs)
	flow in river at USGS Gage	Q_r6_H =	1,084.41	(cfs)
	total flow into Colby Lake	Q_cl_H =	1,421.94	(cfs)
	flow check	Q_ck_H =	1,421.94	(cfs)
Input flow data	surface water flow into SW-001	Q_s1_H =	84.17	(cfs)
	surface water flow into SW-002	Q_s2_H =	86.83	(cfs)
	surface water flow into SW-003	Q_s3_H =	55.43	(cfs)
	surface water flow into SW-004	Q_s4_H =	55.21	(cfs)
	surface water flow into SW-004A	Q_s4a_H =	631.76	(cfs)
	surface water flow into SW-005	Q_s5_H =	163.69	(cfs)
	surface water flow into USGS Gage	Q_s6_H =	1.04	(cfs)
	surface water flow into USGS Gage	Q_scl_H =	335.97	(cfs)
	surface water inflow from Hoyt Lakes WWTP	Q_shl_H =	0.39	(cfs)
	surface water inflow from discharges upstream of PM-1	Q_sns_H =	1.00	(cfs)
	surface water flow from West Pit overflow	Q_sms_H =	-	(cfs)
	ground water flow into SW-001	Q_g1_H =	0.18	(cfs)
	ground water flow into SW-002	Q_g2_H =	0.26	(cfs)
	ground water flow into SW-003	Q_g3_H =	0.10	(cfs)
	ground water flow into SW-004	Q_g4_H =	0.30	(cfs)
	ground water flow into SW-004A	Q_g4a_H =	1.38	(cfs)
	ground water flow into SW-005	Q_g5_H =	2.27	(cfs)
	ground water flow into USGS Gage	Q_g6_H =	0.47	(cfs)
	ground water flow into Colby Lake	Q_gcl_H =	1.17	(cfs)
	ground water seepage from East Pit to SW-003	Q_gep_003_H =	0.0112	(cfs)
	ground water seepage from East Pit to SW-004	Q_gep_004_H =	0.0112	(cfs)
	ground water seepage from West Pit	Q_gwp_H =	-	(cfs)
	ground water liner leakage from Cat 1 stockpile	Q_gC12_H =	0.0227	(cfs)
	ground water liner leakage from Cat 2/3 stockpile to SW-003	Q_gC3_003_H =	0.0002	(cfs)
	ground water liner leakage from Cat 2/3 stockpile to SW-004	Q_gC3_004_H =	-	(cfs)
	ground water liner leakage from Cat 3LO stockpile to SW-003	Q_gC3LO_003_H =	0.0002	(cfs)
	ground water liner leakage from Cat 3LO stockpile to SW-004	Q_gC3LO_004_H =	0.0002	(cfs)
	ground water liner leakage from Cat 4 stockpile	Q_gC4_H =	0.0001	(cfs)
	ground water liner leakage from LO SP	Q_gC4LO_H =	0.0002	(cfs)
	ground water seepage from Overburden Storage	Q_gOS_H =	0.0765	(cfs)
	ground water seepage from Overburden (Cat 1)	Q_gO12_H =	0.1674	(cfs)
	ground water liner leakage from Cat 1 sumps	Q_gC12s_H =	0.0000	(cfs)
	ground water liner leakage from Cat 2/3 sumps	Q_gC3s_H =	0.0000	(cfs)
	ground water liner leakage from Cat 3LO sumps	Q_gC3LOs_H =	0.0000	(cfs)
	ground water liner leakage from Cat 4 sumps	Q_gC4s_H =	0.0000	(cfs)
	ground water liner leakage from LO SP sumps	Q_gC4LOs_H =	0.0000	(cfs)
	ground water seepage from Overburden pond - PW1	Q_gOp1_H =	0.0189	(cfs)
	ground water seepage from Overburden pond - PW7	Q_gOp7_H =	-	(cfs)
	ground water leakage from Haul Road pond - PW2	Q_gHRp2_H =	0.0000	(cfs)
	ground water leakage from Haul Road pond - PW4	Q_gHRp4_H =	0.0000	(cfs)
	ground water leakage from RTH pond - PW3	Q_gRTHp_H =	0.0000	(cfs)
	ground water liner leakage from WWTF pond	Q_gWTFp_H =	0.000016	(cfs)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case	Year 20		
Parameter	Silver		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0001 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0001 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0001 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0001 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0001 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0001 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0001 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0001 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0001 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0001 (mg/L)
	concentration of surface water runoff from mine site	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0006 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0006 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0006 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0006 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0006 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0006 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0006 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0006 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.0007 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.0007 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0007 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0007 (mg/L)
	concentration of liner leakage from LOSP stockpile	C gC4LO =	0.0007 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	- (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.0007 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.0007 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.0007 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0007 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0007 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	- (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0006 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0006 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0006 (mg/L)
	concentration of liner leakage from WWTF pond	C gWTFp =	0.0008 (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M s1 =	0.23820 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.00280 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.00340 (mg/s)
	mass flux of surface water into SW-002	M s2 =	0.24573 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.00401 (mg/s)
	mass flux of surface water into SW-003	M s3 =	0.15687 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.00158 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	0.15625 (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.00473 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	- (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00000 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	1.78788 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.02150 (mg/s)
	mass flux of West Pit Overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	0.00045 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	0.46323 (mg/s)
	mass flux of ground water into SW-005	M g5 =	0.03533 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	0.00295 (mg/s)
mass flux of ground water into USGS Gage	M g6 =	0.00732 (mg/s)	
mass flux of surface water into Colby Lake	M scl =	0.95080 (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	0.01821 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.00110 (mg/s)	
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M r1 =	0.2444 (mg/s)
	mass flux in river at SW-002	M r2 =	0.4941 (mg/s)
	mass flux in river at SW-003	M r3 =	0.6526 (mg/s)
	mass flux in river at SW-004	M r4 =	0.8136 (mg/s)
	mass flux in river at SW-004A	M r4A =	2.6234 (mg/s)
	mass flux in river at SW-005	M r5 =	3.1220 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M r6 =	3.1323 (mg/s)
	mass flux into Colby Lake	M cl =	4.1024 (mg/s)
	High Flow		
	concentration in river at SW-001	C r1 =	0.00010 (mg/L)
	concentration in river at SW-002	C r2 =	0.00010 (mg/L)
	concentration in river at SW-003	C r3 =	0.00010 (mg/L)
	concentration in river at SW-004	C r4 =	0.00010 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00010 (mg/L)
	concentration in river at SW-005	C r5 =	0.00010 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00010 (mg/L)
	concentration in Colby Lake (H)	C cl =	0.00011 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case	Year 20		
Parameter	Aluminum		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0700 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0700 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0700 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0700 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0700 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0700 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0700 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0700 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0700 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0173 (mg/L)
	concentration of surface water runoff from mine site	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.1250 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.1250 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.1250 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.1250 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.1250 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.1250 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.1250 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.1250 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	1.6800 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	1.6800 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	1.6800 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	1.6800 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	81.3275 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.4106 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.1400 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	1.6800 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	1.6800 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	1.6800 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	1.6800 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	81.3275 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.4106 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.1250 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.1250 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.1250 (mg/L)
	concentration of liner leakage from WWTF pond	C gWTFp =	0.5719 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	166.74077 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.63675 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.48959 (mg/s)
	mass flux of surface water into SW-002	M s2 =	172.01315 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.91193 (mg/s)
	mass flux of surface water into SW-003	M s3 =	109.81145 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.35995 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.01001 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00860 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	109.37481 (mg/s)
	mass flux of ground water into SW-004	M g4 =	1.07480 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00860 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00516 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.49451 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.88859 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00011 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.21972 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00005 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00010 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00026 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	1,251.51520 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	4.88584 (mg/s)
	mass flux of West Pit Overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	1.07866 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00004 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	0.66310 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	324.26223 (mg/s)
	mass flux of ground water into SW-005	M g5 =	8.03013 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	2.06440 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	1.66263 (mg/s)
mass flux of surface water into Colby Lake	M scl =	665.55657 (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	4.13888 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.77259 (mg/s)	
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M r1 =	167.8671 (mg/s)
	mass flux in river at SW-002	M r2 =	340.7922 (mg/s)
	mass flux in river at SW-003	M r3 =	450.9822 (mg/s)
	mass flux in river at SW-004	M r4 =	563.0489 (mg/s)
	mass flux in river at SW-004A	M r4A =	1,821.1918 (mg/s)
	mass flux in river at SW-005	M r5 =	2,153.4841 (mg/s)
	mass flux in river at USGS Gage	M r6 =	2,157.2111 (mg/s)
mass flux into Colby Lake	M cl =	2,827.6792 (mg/s)	
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C r1 =	0.06950 (mg/L)
	concentration in river at SW-002	C r2 =	0.06983 (mg/L)
	concentration in river at SW-003	C r3 =	0.06990 (mg/L)
	concentration in river at SW-004	C r4 =	0.07015 (mg/L)
	concentration in river at SW-004A	C r4A =	0.07018 (mg/L)
	concentration in river at SW-005	C r5 =	0.07027 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.07029 (mg/L)
	concentration in Colby Lake (H)	C cl =	0.07180 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case	Year 20		
Parameter	Arsenic		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0021 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0021 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0021 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0021 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0021 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0021 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0021 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0021 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0021 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0065 (mg/L)
	concentration of surface water runoff from mine site	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0022 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0022 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0022 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0022 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0022 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0022 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0022 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0022 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.1552 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.2261 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.2984 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.7100 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.0811 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0016 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.0027 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.1552 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.2261 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.2984 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.7100 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0811 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0016 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0022 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0022 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0022 (mg/L)
	concentration of liner leakage from WWTF pond	C gWTFp =	0.1278 (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M s1 =	5.02604 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.01100 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.18395 (mg/s)
	mass flux of surface water into SW-002	M s2 =	5.18497 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.01576 (mg/s)
	mass flux of surface water into SW-003	M s3 =	3.31003 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.00622 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.00135 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00153 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	3.29687 (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.01857 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00153 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00218 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00049 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.00338 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.00083 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00006 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	37.72424 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.08443 (mg/s)
	mass flux of West Pit Overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	0.09964 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	0.01279 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	9.77419 (mg/s)
	mass flux of ground water into SW-005	M g5 =	0.13876 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	0.06223 (mg/s)
mass flux of ground water into USGS Gage	M g6 =	0.02873 (mg/s)	
mass flux of surface water into Colby Lake	M scl =	20.06178 (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	0.07152 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.02329 (mg/s)	
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M r1 =	5.2210 (mg/s)
	mass flux in river at SW-002	M r2 =	10.4217 (mg/s)
	mass flux in river at SW-003	M r3 =	13.7408 (mg/s)
	mass flux in river at SW-004	M r4 =	17.0648 (mg/s)
	mass flux in river at SW-004A	M r4A =	54.9859 (mg/s)
	mass flux in river at SW-005	M r5 =	64.8988 (mg/s)
	mass flux in river at USGS Gage	M r6 =	64.9898 (mg/s)
	mass flux into Colby Lake	M cl =	85.1464 (mg/s)
	Convert mass flux to concentration	High Flow	
concentration in river at SW-001		C r1 =	0.00216 (mg/L)
concentration in river at SW-002		C r2 =	0.00214 (mg/L)
concentration in river at SW-003		C r3 =	0.00213 (mg/L)
concentration in river at SW-004		C r4 =	0.00213 (mg/L)
concentration in river at SW-004A		C r4A =	0.00212 (mg/L)
concentration in river at SW-005		C r5 =	0.00212 (mg/L)
concentration in river at USGS Gage		C r6 =	0.00212 (mg/L)
concentration in Colby Lake (H)		C cl =	0.00215 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case	Year 20		
Parameter	Boron		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0450 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0450 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0450 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0450 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0450 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0450 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0450 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0450 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0450 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0960 (mg/L)
	concentration of surface water runoff from mine site	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0870 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0870 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0870 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0870 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0870 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0870 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0870 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0870 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.5810 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.7600 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.7600 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.7600 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.7600 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0622 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.0370 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.5810 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.7600 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.7600 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.7600 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.7600 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0622 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0870 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0870 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0870 (mg/L)
	concentration of liner leakage from WWTF pond	C gWTFp =	0.2524 (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M s1 =	107.19050 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.44318 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	2.71680 (mg/s)
	mass flux of surface water into SW-002	M s2 =	110.57988 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.63470 (mg/s)
	mass flux of surface water into SW-003	M s3 =	70.59308 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.25053 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.00453 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00389 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	70.31238 (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.74806 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00389 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00234 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00462 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.13461 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.03328 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00003 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00007 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00012 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	804.54548 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	3.40055 (mg/s)
	mass flux of West Pit Overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	0.37305 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	0.17525 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	208.45429 (mg/s)
	mass flux of ground water into SW-005	M g5 =	5.58897 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	1.32712 (mg/s)
mass flux of ground water into USGS Gage	M g6 =	1.15719 (mg/s)	
mass flux of surface water into Colby Lake	M scl =	427.85780 (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	2.88066 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.49667 (mg/s)	
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M r1 =	110.3505 (mg/s)
	mass flux in river at SW-002	M r2 =	221.5651 (mg/s)
	mass flux in river at SW-003	M r3 =	292.4171 (mg/s)
	mass flux in river at SW-004	M r4 =	363.6565 (mg/s)
	mass flux in river at SW-004A	M r4A =	1,172.1508 (mg/s)
	mass flux in river at SW-005	M r5 =	1,386.1941 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M r6 =	1,388.6784 (mg/s)
	mass flux into Colby Lake	M cl =	1,819.9135 (mg/s)
	High Flow		
	concentration in river at SW-001	C r1 =	0.04569 (mg/L)
	concentration in river at SW-002	C r2 =	0.04540 (mg/L)
	concentration in river at SW-003	C r3 =	0.04532 (mg/L)
	concentration in river at SW-004	C r4 =	0.04531 (mg/L)
	concentration in river at SW-004A	C r4A =	0.04517 (mg/L)
	concentration in river at SW-005	C r5 =	0.04523 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.04525 (mg/L)
	concentration in Colby Lake (H)	C cl =	0.04654 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case	Year 20		
Parameter	Barium		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0077 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0077 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0077 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0077 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0077 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0077 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0077 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0077 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0077 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0050 (mg/L)
	concentration of surface water runoff from mine site	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0219 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0219 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0219 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0219 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0219 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0219 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0219 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0219 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.1900 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.1900 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.1900 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.1900 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.1900 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0168 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.0140 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.1900 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.1900 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.1900 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.1900 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.1900 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0168 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0219 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0219 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0219 (mg/L)
	concentration of liner leakage from WWTF ponc	C gWTFp =	0.0639 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	18.29384 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.11166 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.14150 (mg/s)
	mass flux of surface water into SW-002	M s2 =	18.87230 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.15992 (mg/s)
	mass flux of surface water into SW-003	M s3 =	12.04789 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.06312 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.00113 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00097 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	11.99998 (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.18848 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00097 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00058 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00116 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.03643 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.00901 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00001 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00002 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00003 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	137.30910 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.85678 (mg/s)
	mass flux of West Pit Overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	0.12199 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	0.06631 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	35.57620 (mg/s)
	mass flux of ground water into SW-005	M g5 =	1.40816 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	0.22649 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.29156 (mg/s)
mass flux of surface water into Colby Lake	M scl =	73.02106 (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	0.72579 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.08476 (mg/s)	
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M r1 =	18.5470 (mg/s)
	mass flux in river at SW-002	M r2 =	37.5792 (mg/s)
	mass flux in river at SW-003	M r3 =	49.6923 (mg/s)
	mass flux in river at SW-004	M r4 =	61.9290 (mg/s)
	mass flux in river at SW-004A	M r4A =	200.2832 (mg/s)
	mass flux in river at SW-005	M r5 =	237.2675 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M r6 =	237.7856 (mg/s)
	mass flux into Colby Lake	M cl =	311.6172 (mg/s)
	High Flow		
	concentration in river at SW-001	C r1 =	0.00768 (mg/L)
	concentration in river at SW-002	C r2 =	0.00770 (mg/L)
	concentration in river at SW-003	C r3 =	0.00770 (mg/L)
	concentration in river at SW-004	C r4 =	0.00772 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00772 (mg/L)
	concentration in river at SW-005	C r5 =	0.00774 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00775 (mg/L)
	concentration in Colby Lake (H)	C cl =	0.00811 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case		Year 20	
Parameter		Beryllium	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0001 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0001 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0001 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0001 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0001 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0001 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0001 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0001 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0001 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0001 (mg/L)
	concentration of surface water runoff from mine site	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0001 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0001 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0001 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0001 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0001 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0001 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0001 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0001 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0002 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0002 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0023 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	- (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0002 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0002 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0023 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	- (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0001 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0001 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0001 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0003 (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M_s1 =	0.23820 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00074 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.00283 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	0.24573 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.00106 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.15687 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00042 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.15625 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.00125 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	- (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00000 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	1.78788 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.00567 (mg/s)
	mass flux of West Pit Overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.00013 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	0.46323 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.00931 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.00295 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.00193 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	0.95080 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.00480 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00110 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	0.2418 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.4886 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.6459 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.8034 (mg/s)
	mass flux in river at SW-004A	M_r4A =	2.5970 (mg/s)
	mass flux in river at SW-005	M_r5 =	3.0696 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	3.0745 (mg/s)
	mass flux into Colby Lake	M_cl =	4.0312 (mg/s)
	High Flow		
	concentration in river at SW-001	C_r1 =	0.00010 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00010 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00010 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00010 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00010 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00010 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00010 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.00010 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case	Year 20		
Parameter	Calcium		
Input concentration data	concentration of surface water into SW-001	C s1 =	17.0000 (mg/L)
	concentration of surface water into SW-002	C s2 =	17.0000 (mg/L)
	concentration of surface water into SW-003	C s3 =	17.0000 (mg/L)
	concentration of surface water into SW-004	C s4 =	17.0000 (mg/L)
	concentration of surface water into SW-004A	C s4A =	17.0000 (mg/L)
	concentration of surface water into SW-005	C s5 =	17.0000 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	17.0000 (mg/L)
	concentration of surface water into Colby Lake	C scl =	17.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	17.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	24.5000 (mg/L)
	concentration of surface water runoff from mine site	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	14.7900 (mg/L)
	concentration of ground water into SW-002	C g2 =	14.7900 (mg/L)
	concentration of ground water into SW-003	C g3 =	14.7900 (mg/L)
	concentration of ground water into SW-004	C g4 =	14.7900 (mg/L)
	concentration of ground water into SW-004A	C g4A =	14.7900 (mg/L)
	concentration of ground water into SW-005	C g5 =	14.7900 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	14.7900 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	14.7900 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	540.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	540.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	540.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	540.0000 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	370.8751 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	9.3700 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	15.8000 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	540.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	540.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	540.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	540.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	370.8751 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	9.3700 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	14.7900 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	14.7900 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	14.7900 (mg/L)
	concentration of liner leakage from WWTF pond	C gWTFp =	149.6535 (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M s1 =	40,494.18700 (mg/s)
	mass flux of ground water into SW-001	M g1 =	75.34026 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	693.35000 (mg/s)
	mass flux of surface water into SW-002	M s2 =	41,774.62169 (mg/s)
	mass flux of ground water into SW-002	M g2 =	107.89920 (mg/s)
	mass flux of surface water into SW-003	M s3 =	26,668.49591 (mg/s)
	mass flux of ground water into SW-003	M g3 =	42.58957 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	3.21789 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	2.76568 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00044 (mg/s)
	mass flux of surface water into SW-004	M s4 =	26,562.45336 (mg/s)
	mass flux of ground water into SW-004	M g4 =	127.16988 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	2.76568 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	1.65912 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	2.25509 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	20.27794 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00042 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00038 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00049 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	5.01400 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00563 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.01206 (mg/s)
mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)	
mass flux of liner leakage from WWTF pond	M gWTFp =	0.06879 (mg/s)	
mass flux of surface water into SW-004A	M s4A =	303,939.40521 (mg/s)	
mass flux of ground water into SW-004A	M g4A =	578.09279 (mg/s)	
mass flux of West Pit Overflow	M sms =	#N/A (mg/s)	
mass flux of liner leakage from Cat 1 stockpile	M gC12 =	346.71361 (mg/s)	
mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.01183 (mg/s)	
mass flux of seepage from Overburden (Cat 1)	M gO12 =	74.83577 (mg/s)	
mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)	
mass flux of surface water into SW-005	M s5 =	78,749.39938 (mg/s)	
mass flux of ground water into SW-005	M g5 =	950.12439 (mg/s)	
mass flux of surface water into USGS Gage	M s6 =	501.35488 (mg/s)	
mass flux of ground water into USGS Gage	M g6 =	196.72179 (mg/s)	
mass flux of surface water into Colby Lake	M scl =	161,635.16700 (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	489.71169 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	187.62900 (mg/s)	
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M r1 =	41,262.8773 (mg/s)
	mass flux in river at SW-002	M r2 =	83,145.3962 (mg/s)
	mass flux in river at SW-003	M r3 =	109,862.4676 (mg/s)
	mass flux in river at SW-004	M r4 =	136,584.1509 (mg/s)
	mass flux in river at SW-004A	M r4A =	441,523.2101 (mg/s)
	mass flux in river at SW-005	M r5 =	521,222.7339 (mg/s)
	mass flux in river at USGS Gage	M r6 =	521,920.8105 (mg/s)
mass flux into Colby Lake	M cl =	684,233.3182 (mg/s)	
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C r1 =	17.08321 (mg/L)
	concentration in river at SW-002	C r2 =	17.03788 (mg/L)
	concentration in river at SW-003	C r3 =	17.02773 (mg/L)
	concentration in river at SW-004	C r4 =	17.01750 (mg/L)
	concentration in river at SW-004A	C r4A =	17.01481 (mg/L)
	concentration in river at SW-005	C r5 =	17.00790 (mg/L)
	concentration in river at USGS Gage	C r6 =	17.00694 (mg/L)
concentration in Colby Lake (H)	C cl =	17.02427 (mg/L)	

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case	Year 20		
Parameter	Cadmium		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0001 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0001 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0001 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0001 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0001 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0001 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0001 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0001 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0001 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0001 (mg/L)
	concentration of surface water runoff from mine site	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0001 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0001 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0001 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0001 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0001 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0001 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0001 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0001 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0002 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0002 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.0149 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0001 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	(mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.0002 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0002 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0149 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0001 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0001 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0001 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0001 (mg/L)
	concentration of liner leakage from WWTF pond	C gWTFp =	0.0002 (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M s1 =	0.23820 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.00051 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.00283 (mg/s)
	mass flux of surface water into SW-002	M s2 =	0.24573 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.00073 (mg/s)
	mass flux of surface water into SW-003	M s3 =	0.15687 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.00029 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	0.15625 (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.00086 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00009 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.00013 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.00003 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00000 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	1.78788 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.00391 (mg/s)
	mass flux of West Pit Overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	0.00012 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	0.46323 (mg/s)
	mass flux of ground water into SW-005	M g5 =	0.00642 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	0.00295 (mg/s)
mass flux of ground water into USGS Gage	M g6 =	0.00133 (mg/s)	
mass flux of surface water into Colby Lake	M scl =	0.95080 (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	0.00331 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.00110 (mg/s)	
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M r1 =	0.2415 (mg/s)
	mass flux in river at SW-002	M r2 =	0.4880 (mg/s)
	mass flux in river at SW-003	M r3 =	0.6452 (mg/s)
	mass flux in river at SW-004	M r4 =	0.8025 (mg/s)
	mass flux in river at SW-004A	M r4A =	2.5944 (mg/s)
	mass flux in river at SW-005	M r5 =	3.0641 (mg/s)
	mass flux in river at USGS Gage	M r6 =	3.0684 (mg/s)
	mass flux into Colby Lake	M cl =	4.0236 (mg/s)
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C r1 =	0.00010 (mg/L)
	concentration in river at SW-002	C r2 =	0.00010 (mg/L)
	concentration in river at SW-003	C r3 =	0.00010 (mg/L)
	concentration in river at SW-004	C r4 =	0.00010 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00010 (mg/L)
	concentration in river at SW-005	C r5 =	0.00010 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00010 (mg/L)
	concentration in Colby Lake (H)	C cl =	0.00010 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case	Year 20		
Parameter	Chloride		
Input concentration data	concentration of surface water into SW-001	C s1 =	8.0000 (mg/L)
	concentration of surface water into SW-002	C s2 =	8.0000 (mg/L)
	concentration of surface water into SW-003	C s3 =	8.0000 (mg/L)
	concentration of surface water into SW-004	C s4 =	8.0000 (mg/L)
	concentration of surface water into SW-004A	C s4A =	8.0000 (mg/L)
	concentration of surface water into SW-005	C s5 =	8.0000 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	8.0000 (mg/L)
	concentration of surface water into Colby Lake	C scl =	8.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	8.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	1.6000 (mg/L)
	concentration of surface water runoff from mine site	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	6.6000 (mg/L)
	concentration of ground water into SW-002	C g2 =	6.6000 (mg/L)
	concentration of ground water into SW-003	C g3 =	6.6000 (mg/L)
	concentration of ground water into SW-004	C g4 =	6.6000 (mg/L)
	concentration of ground water into SW-004A	C g4A =	6.6000 (mg/L)
	concentration of ground water into SW-005	C g5 =	6.6000 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	6.6000 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	6.6000 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	- (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	67.4455 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	68.2584 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.5331 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	1.1097 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	5.3500 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	2.3300 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	- (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	67.4455 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	68.2584 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.5331 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	1.1097 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	5.3500 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	6.6000 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	6.6000 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	6.6000 (mg/L)
	concentration of liner leakage from WWTF pond	C gWTFp =	0.9851 (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M s1 =	19,056.08800 (mg/s)
	mass flux of ground water into SW-001	M g1 =	33.62040 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	45.28000 (mg/s)
	mass flux of surface water into SW-002	M s2 =	19,658.64550 (mg/s)
	mass flux of ground water into SW-002	M g2 =	48.14975 (mg/s)
	mass flux of surface water into SW-003	M s3 =	12,549.88043 (mg/s)
	mass flux of ground water into SW-003	M g3 =	19.00549 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.40191 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.34959 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00005 (mg/s)
	mass flux of surface water into SW-004	M s4 =	12,499.97805 (mg/s)
	mass flux of ground water into SW-004	M g4 =	56.74924 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.34959 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00164 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00675 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	11.57812 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00005 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	2.86285 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00251 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00538 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00045 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	143,030.30833 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	257.97244 (mg/s)
	mass flux of West Pit Overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	- (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	11.03591 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	37,058.54088 (mg/s)
	mass flux of ground water into SW-005	M g5 =	423.99060 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	235.93171 (mg/s)
mass flux of ground water into USGS Gage	M g6 =	87.78660 (mg/s)	
mass flux of surface water into Colby Lake	M scl =	76,063.60800 (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	218.53260 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	88.29600 (mg/s)	
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M r1 =	19,134.9884 (mg/s)
	mass flux in river at SW-002	M r2 =	38,841.7836 (mg/s)
	mass flux in river at SW-003	M r3 =	51,411.4211 (mg/s)
	mass flux in river at SW-004	M r4 =	63,962.9558 (mg/s)
	mass flux in river at SW-004A	M r4A =	207,282.2725 (mg/s)
	mass flux in river at SW-005	M r5 =	244,764.8040 (mg/s)
	mass flux in river at USGS Gage	M r6 =	245,088.5223 (mg/s)
	mass flux into Colby Lake	M cl =	321,458.9589 (mg/s)
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C r1 =	7.92206 (mg/L)
	concentration in river at SW-002	C r2 =	7.95933 (mg/L)
	concentration in river at SW-003	C r3 =	7.96833 (mg/L)
	concentration in river at SW-004	C r4 =	7.97186 (mg/L)
	concentration in river at SW-004A	C r4A =	7.98796 (mg/L)
	concentration in river at SW-005	C r5 =	7.98687 (mg/L)
	concentration in river at USGS Gage	C r6 =	7.98628 (mg/L)
	concentration in Colby Lake (H)	C cl =	7.92329 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case	Year 20		
Parameter	Cobalt		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0005 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0005 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0005 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0005 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0005 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0005 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0005 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0005 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0005 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0005 (mg/L)
	concentration of surface water runoff from mine site	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0017 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0017 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0017 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0017 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0017 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0017 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0017 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0017 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.0235 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.0343 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0452 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0520 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	4.4770 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0011 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.0013 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.0235 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.0343 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.0452 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0520 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	4.4770 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0011 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0017 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0017 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0017 (mg/L)
	concentration of liner leakage from WWTF pond	C gWTFp =	0.0312 (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M s1 =	1.19101 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.00841 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.01415 (mg/s)
	mass flux of surface water into SW-002	M s2 =	1.22867 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.01204 (mg/s)
	mass flux of surface water into SW-003	M s3 =	0.78437 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.00475 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.00020 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00023 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	0.78125 (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.01419 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00023 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00016 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.02722 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.00240 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00001 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.00059 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00001 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	8.93939 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.06449 (mg/s)
	mass flux of West Pit Overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	0.01509 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	0.00616 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	2.31616 (mg/s)
	mass flux of ground water into SW-005	M g5 =	0.10600 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	0.01475 (mg/s)
mass flux of ground water into USGS Gage	M g6 =	0.02195 (mg/s)	
mass flux of surface water into Colby Lake	M scl =	4.75398 (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	0.05463 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.00552 (mg/s)	
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M r1 =	1.2136 (mg/s)
	mass flux in river at SW-002	M r2 =	2.4543 (mg/s)
	mass flux in river at SW-003	M r3 =	3.2438 (mg/s)
	mass flux in river at SW-004	M r4 =	4.0699 (mg/s)
	mass flux in river at SW-004A	M r4A =	13.0950 (mg/s)
	mass flux in river at SW-005	M r5 =	15.5172 (mg/s)
	mass flux in river at USGS Gage	M r6 =	15.5539 (mg/s)
	mass flux into Colby Lake	M cl =	20.3680 (mg/s)
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C r1 =	0.00050 (mg/L)
	concentration in river at SW-002	C r2 =	0.00050 (mg/L)
	concentration in river at SW-003	C r3 =	0.00050 (mg/L)
	concentration in river at SW-004	C r4 =	0.00051 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00050 (mg/L)
	concentration in river at SW-005	C r5 =	0.00051 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00051 (mg/L)
	concentration in Colby Lake (H)	C cl =	0.00054 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Year 20 Copper		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0017 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0017 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0017 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0017 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0017 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0017 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0017 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0017 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0190 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0012 (mg/L)
	concentration of surface water runoff from mine site	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0030 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0030 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0030 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0030 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0030 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0030 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0030 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0030 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0920 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0920 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0920 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.0920 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	1.0782 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0214 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.0170 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0920 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0920 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_g3LOs =	0.0920 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.0920 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	1.0782 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0214 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0030 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0030 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0030 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.1862 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	4.04942 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.01503 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.03509 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	4.17746 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.02152 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	2.66685 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00849 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00055 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00047 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	2.65625 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.02537 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00047 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00028 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00656 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.04840 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.01147 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00009 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	30.39394 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.11531 (mg/s)
	mass flux of West Pit Overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.05907 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.08052 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	7.87494 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.18951 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.05014 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.03924 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	16.16352 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.09768 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.20970 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	4.0995 (mg/s)
	mass flux in river at SW-002	M_r2 =	8.2985 (mg/s)
	mass flux in river at SW-003	M_r3 =	10.9749 (mg/s)
	mass flux in river at SW-004	M_r4 =	13.7218 (mg/s)
	mass flux in river at SW-004A	M_r4A =	44.3706 (mg/s)
	mass flux in river at SW-005	M_r5 =	52.4351 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	52.5244 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	68.9953 (mg/s)
	High Flow		
	concentration in river at SW-001	C_r1 =	0.00170 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00170 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00170 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00171 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00171 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00171 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00171 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.00179 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case	Year 20		
Parameter	Fluoride		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0700 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0700 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0700 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0700 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0700 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0700 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0700 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0700 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0700 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.1400 (mg/L)
	concentration of surface water runoff from mine site	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.2800 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.2800 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.2800 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.2800 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.2800 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.2800 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.2800 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.2800 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.0621 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.0621 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0621 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0621 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.0624 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.2239 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.4200 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.0621 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.0621 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.0621 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0621 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0624 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.2239 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.2800 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.2800 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.2800 (mg/L)
	concentration of liner leakage from WWTF pond	C gWTFp =	0.2112 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	166.74077 (mg/s)
	mass flux of ground water into SW-001	M g1 =	1.42632 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	3.96200 (mg/s)
	mass flux of surface water into SW-002	M s2 =	172.01315 (mg/s)
	mass flux of ground water into SW-002	M g2 =	2.04272 (mg/s)
	mass flux of surface water into SW-003	M s3 =	109.81145 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.80629 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.00037 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00032 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	109.37481 (mg/s)
	mass flux of ground water into SW-004	M g4 =	2.40754 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00032 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00019 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00038 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.48453 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.11981 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00011 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00023 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00010 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	1,251.51520 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	10.94429 (mg/s)
	mass flux of West Pit Overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	0.03986 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	1.98931 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	324.26223 (mg/s)
	mass flux of ground water into SW-005	M g5 =	17.98748 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	2.06440 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	3.72428 (mg/s)
mass flux of surface water into Colby Lake	M scl =	665.55657 (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	9.27108 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.77259 (mg/s)	
Mass balance at each node	mass flux in river at SW-001	M r1 =	172.1201 (mg/s)
	mass flux in river at SW-002	M r2 =	346.1850 (mg/s)
	mass flux in river at SW-003	M r3 =	456.8034 (mg/s)
	mass flux in river at SW-004	M r4 =	569.1914 (mg/s)
	mass flux in river at SW-004A	M r4A =	1,833.6800 (mg/s)
	mass flux in river at SW-005	M r5 =	2,175.9298 (mg/s)
	mass flux in river at USGS Gage	M r6 =	2,181.7184 (mg/s)
mass flux into Colby Lake	M cl =	2,857.3187 (mg/s)	
Convert mass flux to concentration	concentration in river at SW-001	C r1 =	0.07126 (mg/L)
	concentration in river at SW-002	C r2 =	0.07094 (mg/L)
	concentration in river at SW-003	C r3 =	0.07080 (mg/L)
	concentration in river at SW-004	C r4 =	0.07092 (mg/L)
	concentration in river at SW-004A	C r4A =	0.07066 (mg/L)
	concentration in river at SW-005	C r5 =	0.07100 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.07109 (mg/L)
	concentration in Colby Lake (H)	C cl =	0.07671 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case	Year 20		
Parameter	Iron		
Input concentration data	concentration of surface water into SW-001	C s1 =	1.6000 (mg/L)
	concentration of surface water into SW-002	C s2 =	1.6000 (mg/L)
	concentration of surface water into SW-003	C s3 =	1.6000 (mg/L)
	concentration of surface water into SW-004	C s4 =	1.6000 (mg/L)
	concentration of surface water into SW-004A	C s4A =	1.6000 (mg/L)
	concentration of surface water into SW-005	C s5 =	1.6000 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	1.6000 (mg/L)
	concentration of surface water into Colby Lake	C scl =	1.6000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	1.6000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0300 (mg/L)
	concentration of surface water runoff from mine site	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	2.8440 (mg/L)
	concentration of ground water into SW-002	C g2 =	2.8440 (mg/L)
	concentration of ground water into SW-003	C g3 =	2.8440 (mg/L)
	concentration of ground water into SW-004	C g4 =	2.8440 (mg/L)
	concentration of ground water into SW-004A	C g4A =	2.8440 (mg/L)
	concentration of ground water into SW-005	C g5 =	2.8440 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	2.8440 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	2.8440 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.8100 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.8100 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.8100 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.8100 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	235.0000 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.2255 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.1500 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.8100 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.8100 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.8100 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.8100 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	235.0000 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.2255 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	2.8440 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	2.8440 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	2.8440 (mg/L)
	concentration of liner leakage from WWTF pond	C gWTFp =	0.3790 (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M s1 =	3,811.21760 (mg/s)
	mass flux of ground water into SW-001	M g1 =	14.48734 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.84900 (mg/s)
	mass flux of surface water into SW-002	M s2 =	3,931.72910 (mg/s)
	mass flux of ground water into SW-002	M g2 =	20.74816 (mg/s)
	mass flux of surface water into SW-003	M s3 =	2,509.97609 (mg/s)
	mass flux of ground water into SW-003	M g3 =	8.18964 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.00483 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00415 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	2,499.99561 (mg/s)
	mass flux of ground water into SW-004	M g4 =	24.45376 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00415 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00249 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	1.42891 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.48801 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00031 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.12067 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00108 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00232 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00017 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	28,606.06167 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	111.16267 (mg/s)
	mass flux of West Pit Overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	0.52007 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00002 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	0.71047 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	7,411.70818 (mg/s)
	mass flux of ground water into SW-005	M g5 =	182.70140 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	47.18634 (mg/s)
mass flux of ground water into USGS Gage	M g6 =	37.82804 (mg/s)	
mass flux of surface water into Colby Lake	M scl =	15,212.72160 (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	94.16768 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	17.65920 (mg/s)	
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M r1 =	3,826.5539 (mg/s)
	mass flux in river at SW-002	M r2 =	7,779.0312 (mg/s)
	mass flux in river at SW-003	M r3 =	10,297.2059 (mg/s)
	mass flux in river at SW-004	M r4 =	12,823.7034 (mg/s)
	mass flux in river at SW-004A	M r4A =	41,542.1583 (mg/s)
	mass flux in river at SW-005	M r5 =	49,136.5679 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M r6 =	49,221.5822 (mg/s)
	mass flux into Colby Lake	M cl =	64,546.1307 (mg/s)
	High Flow		
	concentration in river at SW-001	C r1 =	1.58423 (mg/L)
	concentration in river at SW-002	C r2 =	1.59405 (mg/L)
	concentration in river at SW-003	C r3 =	1.59598 (mg/L)
	concentration in river at SW-004	C r4 =	1.59775 (mg/L)
	concentration in river at SW-004A	C r4A =	1.60089 (mg/L)
	concentration in river at SW-005	C r5 =	1.60336 (mg/L)
	concentration in river at USGS Gage	C r6 =	1.60390 (mg/L)
	concentration in Colby Lake (H)	C cl =	1.62798 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case	Year 20		
Parameter	Hardness		
Input concentration data	concentration of surface water into SW-001	C s1 =	110.0000 (mg/L)
	concentration of surface water into SW-002	C s2 =	110.0000 (mg/L)
	concentration of surface water into SW-003	C s3 =	110.0000 (mg/L)
	concentration of surface water into SW-004	C s4 =	110.0000 (mg/L)
	concentration of surface water into SW-004A	C s4A =	110.0000 (mg/L)
	concentration of surface water into SW-005	C s5 =	110.0000 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	110.0000 (mg/L)
	concentration of surface water into Colby Lake	C scl =	110.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	110.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	110.0000 (mg/L)
	concentration of surface water runoff from mine site	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	66.4200 (mg/L)
	concentration of ground water into SW-002	C g2 =	66.4200 (mg/L)
	concentration of ground water into SW-003	C g3 =	66.4200 (mg/L)
	concentration of ground water into SW-004	C g4 =	66.4200 (mg/L)
	concentration of ground water into SW-004A	C g4A =	66.4200 (mg/L)
	concentration of ground water into SW-005	C g5 =	66.4200 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	66.4200 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	66.4200 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	1,729.3495 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	1,729.3495 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	1,729.3495 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	1,729.3495 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	3,220.9750 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	43.5200 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	71.5000 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	1,729.3495 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	1,729.3495 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	1,729.3495 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	1,729.3495 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	3,220.9750 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	43.5200 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	66.4200 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	66.4200 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	66.4200 (mg/L)
	concentration of liner leakage from WWTF pond	C gWTFp =	493.7911 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	262,021.21000 (mg/s)
	mass flux of ground water into SW-001	M g1 =	338.34348 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	3,113.00000 (mg/s)
	mass flux of surface water into SW-002	M s2 =	270,306.37565 (mg/s)
	mass flux of ground water into SW-002	M g2 =	484.56154 (mg/s)
	mass flux of surface water into SW-003	M s3 =	172,560.85591 (mg/s)
	mass flux of ground water into SW-003	M g3 =	191.26430 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	10,30529 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	8,85707 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0,00139 (mg/s)
	mass flux of surface water into SW-004	M s4 =	171,874.69823 (mg/s)
	mass flux of ground water into SW-004	M g4 =	571.10370 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	8,85707 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	5,31332 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	19,58499 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	94.18314 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0,00133 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0,00121 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0,00429 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	23.28806 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.02527 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.05414 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00002 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.22696 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	##### (mg/s)
	mass flux of ground water into SW-004A	M g4A =	2,596.14083 (mg/s)
	mass flux of West Pit Overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	1,110.34999 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.03789 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	338.65554 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	509,554.93715 (mg/s)
	mass flux of ground water into SW-005	M g5 =	4,266.88722 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	3,244.06099 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	883.45242 (mg/s)
mass flux of surface water into Colby Lake	M scl =	##### (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	2,199.23262 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	1,214.07000 (mg/s)	
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M r1 =	265,472.5535 (mg/s)
	mass flux in river at SW-002	M r2 =	536,263.4907 (mg/s)
	mass flux in river at SW-003	M r3 =	709,034.7746 (mg/s)
	mass flux in river at SW-004	M r4 =	881,632.1178 (mg/s)
	mass flux in river at SW-004A	M r4A =	2,852,344.0416 (mg/s)
	mass flux in river at SW-005	M r5 =	3,366,165.8660 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M r6 =	3,370.293.3794 (mg/s)
	mass flux into Colby Lake	M cl =	4,419,581.2920 (mg/s)
	High Flow		
	concentration in river at SW-001	C r1 =	109.90809 (mg/L)
	concentration in river at SW-002	C r2 =	109.88936 (mg/L)
	concentration in river at SW-003	C r3 =	109.89427 (mg/L)
	concentration in river at SW-004	C r4 =	109.84566 (mg/L)
	concentration in river at SW-004A	C r4A =	109.91966 (mg/L)
	concentration in river at SW-005	C r5 =	109.84062 (mg/L)
	concentration in river at USGS Gage	C r6 =	109.82195 (mg/L)
	concentration in Colby Lake (H)	C cl =	108.84552 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case	Year 20		
Parameter	Potassium		
Input concentration data	concentration of surface water into SW-001	C s1 =	1.3000 (mg/L)
	concentration of surface water into SW-002	C s2 =	1.3000 (mg/L)
	concentration of surface water into SW-003	C s3 =	1.3000 (mg/L)
	concentration of surface water into SW-004	C s4 =	1.3000 (mg/L)
	concentration of surface water into SW-004A	C s4A =	1.3000 (mg/L)
	concentration of surface water into SW-005	C s5 =	1.3000 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	1.3000 (mg/L)
	concentration of surface water into Colby Lake	C scl =	1.3000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	1.3000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	2.7000 (mg/L)
	concentration of surface water runoff from mine site	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	1.7500 (mg/L)
	concentration of ground water into SW-002	C g2 =	1.7500 (mg/L)
	concentration of ground water into SW-003	C g3 =	1.7500 (mg/L)
	concentration of ground water into SW-004	C g4 =	1.7500 (mg/L)
	concentration of ground water into SW-004A	C g4A =	1.7500 (mg/L)
	concentration of ground water into SW-005	C g5 =	1.7500 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	1.7500 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	1.7500 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	49.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	49.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	49.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	49.0000 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	38.0000 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	2.2600 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	4.4500 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	49.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	49.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	49.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	49.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	38.0000 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	2.2600 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	1.7500 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	1.7500 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	1.7500 (mg/L)
	concentration of liner leakage from WWTF pond	C gWTFp =	13.6661 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	3,096.61430 (mg/s)
	mass flux of ground water into SW-001	M g1 =	8.91450 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	76.41000 (mg/s)
	mass flux of surface water into SW-002	M s2 =	3,194.52989 (mg/s)
	mass flux of ground water into SW-002	M g2 =	12.76698 (mg/s)
	mass flux of surface water into SW-003	M s3 =	2,039.35557 (mg/s)
	mass flux of ground water into SW-003	M g3 =	5.03933 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.29199 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.25096 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00004 (mg/s)
	mass flux of surface water into SW-004	M s4 =	2,031.24643 (mg/s)
	mass flux of ground water into SW-004	M g4 =	15.04715 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.25096 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.15055 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.23106 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	4.89094 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00004 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00003 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00005 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	1.20935 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00067 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00143 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00628 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	23,242.42510 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	68.40178 (mg/s)
	mass flux of West Pit Overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	31.46105 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00107 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	21.07716 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	6,022.01289 (mg/s)
	mass flux of ground water into SW-005	M g5 =	112.42175 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	38.33890 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	23.27675 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	12,360.33630 (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	57.94425 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl =	14.34810 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M r1 =	3,181.9388 (mg/s)
	mass flux in river at SW-002	M r2 =	6,389.2357 (mg/s)
	mass flux in river at SW-003	M r3 =	8,434.1736 (mg/s)
	mass flux in river at SW-004	M r4 =	10,487.2085 (mg/s)
	mass flux in river at SW-004A	M r4A =	33,850.5747 (mg/s)
	mass flux in river at SW-005	M r5 =	39,985.0094 (mg/s)
	mass flux in river at USGS Gage	M r6 =	40,046.6250 (mg/s)
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C r1 =	1.31735 (mg/L)
	concentration in river at SW-002	C r2 =	1.30926 (mg/L)
	concentration in river at SW-003	C r3 =	1.30722 (mg/L)
	concentration in river at SW-004	C r4 =	1.30664 (mg/L)
	concentration in river at SW-004A	C r4A =	1.30449 (mg/L)
	concentration in river at SW-005	C r5 =	1.30474 (mg/L)
	concentration in river at USGS Gage	C r6 =	1.30493 (mg/L)
	concentration in Colby Lake (H)	C cl =	1.32675 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case	Year 20		
Parameter	Magnesium		
Input concentration data	concentration of surface water into SW-001	C s1 =	8.0000 (mg/L)
	concentration of surface water into SW-002	C s2 =	8.0000 (mg/L)
	concentration of surface water into SW-003	C s3 =	8.0000 (mg/L)
	concentration of surface water into SW-004	C s4 =	8.0000 (mg/L)
	concentration of surface water into SW-004A	C s4A =	8.0000 (mg/L)
	concentration of surface water into SW-005	C s5 =	8.0000 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	8.0000 (mg/L)
	concentration of surface water into Colby Lake	C scl =	8.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	8.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	10.5000 (mg/L)
	concentration of surface water runoff from mine site	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	8.0200 (mg/L)
	concentration of ground water into SW-002	C g2 =	8.0200 (mg/L)
	concentration of ground water into SW-003	C g3 =	8.0200 (mg/L)
	concentration of ground water into SW-004	C g4 =	8.0200 (mg/L)
	concentration of ground water into SW-004A	C g4A =	8.0200 (mg/L)
	concentration of ground water into SW-005	C g5 =	8.0200 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	8.0200 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	8.0200 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	93.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	93.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	93.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	93.0000 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	557.9521 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	4.8800 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	9.0100 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	93.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	93.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	93.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	93.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	557.9521 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	4.8800 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	8.0200 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	8.0200 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	8.0200 (mg/L)
	concentration of liner leakage from WWTF pond	C gWTFp =	29.3035 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	19,056.08800 (mg/s)
	mass flux of ground water into SW-001	M g1 =	40.85388 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	297.15000 (mg/s)
	mass flux of surface water into SW-002	M s2 =	19,658.64550 (mg/s)
	mass flux of ground water into SW-002	M g2 =	58.50924 (mg/s)
	mass flux of surface water into SW-003	M s3 =	12,549.88043 (mg/s)
	mass flux of ground water into SW-003	M g3 =	23.09455 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.55419 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.47631 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00007 (mg/s)
	mass flux of surface water into SW-004	M s4 =	12,499.97805 (mg/s)
	mass flux of ground water into SW-004	M g4 =	68.95892 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.47631 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.28574 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	3.39260 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	10.56098 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00007 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00007 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00074 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	2.61135 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00305 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00654 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.01347 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	143,030.30833 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	313.47560 (mg/s)
	mass flux of West Pit Overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	59.71179 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00204 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	42.67533 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	37,058.54088 (mg/s)
	mass flux of ground water into SW-005	M g5 =	515.21282 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	235.93171 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	106.67402 (mg/s)
mass flux of surface water into Colby Lake	M scl =	76,063.60800 (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	265.55022 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	88.29600 (mg/s)	
Mass balance at each node	mass flux in river at SW-001	M r1 =	19,394.0919 (mg/s)
	mass flux in river at SW-002	M r2 =	39,111.2466 (mg/s)
	mass flux in river at SW-003	M r3 =	51,685.2522 (mg/s)
	mass flux in river at SW-004	M r4 =	64,271.5401 (mg/s)
	mass flux in river at SW-004A	M r4A =	207,717.7132 (mg/s)
	mass flux in river at SW-005	M r5 =	245,291.4669 (mg/s)
	mass flux in river at USGS Gage	M r6 =	245,634.0727 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M cl =	322,051.5269 (mg/s)
	concentration in river at SW-001	C r1 =	8.02933 (mg/L)
	concentration in river at SW-002	C r2 =	8.01455 (mg/L)
	concentration in river at SW-003	C r3 =	8.01077 (mg/L)
	concentration in river at SW-004	C r4 =	8.00782 (mg/L)
	concentration in river at SW-004A	C r4A =	8.00474 (mg/L)
	concentration in river at SW-005	C r5 =	8.00405 (mg/L)
	concentration in river at USGS Gage	C r6 =	8.00406 (mg/L)
	concentration in Colby Lake (H)	C cl =	8.02077 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case	Year 20		
Parameter	Manganese		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.1500 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.1500 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.1500 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.1500 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.1500 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.1500 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.1500 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.1500 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.1500 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0086 (mg/L)
	concentration of surface water runoff from mine site	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.1240 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.1240 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.1240 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.1240 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.1240 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.1240 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.1240 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.1240 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.3549 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.5172 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.6823 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.7500 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	11.4588 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.1604 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.1160 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.3549 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.5172 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.6823 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.7500 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	11.4588 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.1604 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.1240 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.1240 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.1240 (mg/L)
	concentration of liner leakage from WWTF pond	C gWTFp =	0.2423 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	357.30165 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.63166 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.24338 (mg/s)
	mass flux of surface water into SW-002	M s2 =	368.59960 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.90463 (mg/s)
	mass flux of surface water into SW-003	M s3 =	235.31026 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.35707 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.00308 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00349 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	234.37459 (mg/s)
	mass flux of ground water into SW-004	M g4 =	1.06620 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00349 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00230 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.06967 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.34711 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00002 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.08583 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00005 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00010 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00011 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	2,681.81828 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	4.84675 (mg/s)
	mass flux of West Pit Overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	0.22787 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	0.54943 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	694.84764 (mg/s)
	mass flux of ground water into SW-005	M g5 =	7.96588 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	4.42372 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	1.64932 (mg/s)
mass flux of surface water into Colby Lake	M scl =	1,426.19265 (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	4.10576 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	1.65555 (mg/s)	
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M r1 =	358.1767 (mg/s)
	mass flux in river at SW-002	M r2 =	727.6809 (mg/s)
	mass flux in river at SW-003	M r3 =	963.3548 (mg/s)
	mass flux in river at SW-004	M r4 =	1,199.3043 (mg/s)
	mass flux in river at SW-004A	M r4A =	3,886.7466 (mg/s)
	mass flux in river at SW-005	M r5 =	4,589.5602 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M r6 =	4,595.6332 (mg/s)
	mass flux into Colby Lake	M cl =	6,027.5872 (mg/s)
	High Flow		
	concentration in river at SW-001	C r1 =	0.14829 (mg/L)
	concentration in river at SW-002	C r2 =	0.14911 (mg/L)
	concentration in river at SW-003	C r3 =	0.14931 (mg/L)
	concentration in river at SW-004	C r4 =	0.14943 (mg/L)
	concentration in river at SW-004A	C r4A =	0.14978 (mg/L)
	concentration in river at SW-005	C r5 =	0.14976 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.14975 (mg/L)
	concentration in Colby Lake (H)	C cl =	0.14857 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case	Year 20		
Parameter	Sodium		
Input concentration data	concentration of surface water into SW-001	C s1 =	2.5000 (mg/L)
	concentration of surface water into SW-002	C s2 =	2.5000 (mg/L)
	concentration of surface water into SW-003	C s3 =	2.5000 (mg/L)
	concentration of surface water into SW-004	C s4 =	2.5000 (mg/L)
	concentration of surface water into SW-004A	C s4A =	2.5000 (mg/L)
	concentration of surface water into SW-005	C s5 =	2.5000 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	2.5000 (mg/L)
	concentration of surface water into Colby Lake	C scl =	2.5000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	2.5000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	4.8000 (mg/L)
	concentration of surface water runoff from mine site	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	13.3300 (mg/L)
	concentration of ground water into SW-002	C g2 =	13.3300 (mg/L)
	concentration of ground water into SW-003	C g3 =	13.3300 (mg/L)
	concentration of ground water into SW-004	C g4 =	13.3300 (mg/L)
	concentration of ground water into SW-004A	C g4A =	13.3300 (mg/L)
	concentration of ground water into SW-005	C g5 =	13.3300 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	13.3300 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	13.3300 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	242.4332 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	353.2705 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	466.0941 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	681.0000 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	70.0103 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	4.6000 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	7.1900 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	242.4332 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	353.2705 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	466.0941 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	681.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	70.0103 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	4.6000 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	13.3300 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	13.3300 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	13.3300 (mg/L)
	concentration of liner leakage from WWTF pond	C gWTFp =	172.9501 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	5,955.02750 (mg/s)
	mass flux of ground water into SW-001	M g1 =	67.90302 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	135.84000 (mg/s)
	mass flux of surface water into SW-002	M s2 =	6,143.32672 (mg/s)
	mass flux of ground water into SW-002	M g2 =	97.24790 (mg/s)
	mass flux of surface water into SW-003	M s3 =	3,921.83763 (mg/s)
	mass flux of ground water into SW-003	M g3 =	38.38532 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	2,10516 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	2,38716 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00028 (mg/s)
	mass flux of surface water into SW-004	M s4 =	3,906.24314 (mg/s)
	mass flux of ground water into SW-004	M g4 =	114.61626 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	2,38716 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	2,09233 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.42569 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	9.95502 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00036 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00048 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00009 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	2.46151 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00507 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.01087 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.07949 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	44,696.97135 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	521.02615 (mg/s)
	mass flux of West Pit Overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	155.65718 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00531 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	34.05501 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	11,580.79403 (mg/s)
	mass flux of ground water into SW-005	M g5 =	856.33253 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	73.72866 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	177.30233 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	23,769.87750 (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	441.36963 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl =	27.59250 (mg/s)
Mass balance at each node	mass flux in river at SW-001	M r1 =	6,158.7705 (mg/s)
	mass flux in river at SW-002	M r2 =	12,399.3451 (mg/s)
	mass flux in river at SW-003	M r3 =	16,364.0607 (mg/s)
	mass flux in river at SW-004	M r4 =	20,402.3385 (mg/s)
	mass flux in river at SW-004A	M r4A =	65,810.0535 (mg/s)
	mass flux in river at SW-005	M r5 =	78,247.1800 (mg/s)
	mass flux in river at USGS Gage	M r6 =	78,498.2110 (mg/s)
mass flux into Colby Lake	M cl =	102,737.0507 (mg/s)	
Convert mass flux to concentration	concentration in river at SW-001	C r1 =	2.54979 (mg/L)
	concentration in river at SW-002	C r2 =	2.54083 (mg/L)
	concentration in river at SW-003	C r3 =	2.53629 (mg/L)
	concentration in river at SW-004	C r4 =	2.54200 (mg/L)
	concentration in river at SW-004A	C r4A =	2.53610 (mg/L)
	concentration in river at SW-005	C r5 =	2.55327 (mg/L)
	concentration in river at USGS Gage	C r6 =	2.55789 (mg/L)
	concentration in Colby Lake (H)	C cl =	2.86022 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case	Year 20		
Parameter	Nickel		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0016 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0016 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0016 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0016 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0016 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0016 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0016 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0016 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0033 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0016 (mg/L)
	concentration of surface water runoff from mine site	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0163 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0163 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0163 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0163 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0163 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0163 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0163 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0163 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.1531 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.2230 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.2943 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.8600 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	58.0032 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0080 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.0190 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.1531 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.2230 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.2943 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.8600 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	58.0032 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0080 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0163 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0163 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0163 (mg/L)
	concentration of liner leakage from WWTF pond	C gWTFp =	0.3548 (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M s1 =	3.71594 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.08293 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.04387 (mg/s)
	mass flux of surface water into SW-002	M s2 =	3.83344 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.11877 (mg/s)
	mass flux of surface water into SW-003	M s3 =	2.44723 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.04688 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.00133 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00151 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	2.43750 (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.13998 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00151 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00264 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.35269 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.01725 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00008 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.00426 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00001 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00001 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00016 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	27.89091 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.63633 (mg/s)
	mass flux of West Pit Overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	0.09828 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	0.08999 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	7.22642 (mg/s)
	mass flux of ground water into SW-005	M g5 =	1.04584 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	0.04601 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.21654 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	14.83240 (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	0.53905 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.03642 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M r1 =	3.8427 (mg/s)
	mass flux in river at SW-002	M r2 =	7.7949 (mg/s)
	mass flux in river at SW-003	M r3 =	10.2919 (mg/s)
	mass flux in river at SW-004	M r4 =	13.2480 (mg/s)
	mass flux in river at SW-004A	M r4A =	41.9635 (mg/s)
	mass flux in river at SW-005	M r5 =	50.2357 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M r6 =	50.4963 (mg/s)
	mass flux into Colby Lake	M cl =	65.9062 (mg/s)
	High Flow		
	concentration in river at SW-001	C r1 =	0.00159 (mg/L)
	concentration in river at SW-002	C r2 =	0.00160 (mg/L)
	concentration in river at SW-003	C r3 =	0.00160 (mg/L)
	concentration in river at SW-004	C r4 =	0.00165 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00162 (mg/L)
	concentration in river at SW-005	C r5 =	0.00164 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00165 (mg/L)
	concentration in Colby Lake (H)	C cl =	0.00208 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case	Year 20		
Parameter	Lead		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0005 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0005 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0005 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0005 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0005 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0005 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0005 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0005 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0005 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0002 (mg/L)
	concentration of surface water runoff from mine site	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0011 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0011 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0011 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0011 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0011 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0011 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0011 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0011 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.0183 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.0267 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0352 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0528 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.0528 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0007 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.0183 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.0267 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.0352 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0528 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0528 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0007 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0011 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0011 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0011 (mg/L)
	concentration of liner leakage from WWTF pond	C gWTFp =	0.0140 (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M s1 =	1.19101 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.00571 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.00425 (mg/s)
	mass flux of surface water into SW-002	M s2 =	1.22867 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.00817 (mg/s)
	mass flux of surface water into SW-003	M s3 =	0.78437 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.00323 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.00016 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00018 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	0.78125 (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.00963 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00018 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00016 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00032 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.00146 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.00036 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00001 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	8.93939 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.04378 (mg/s)
	mass flux of West Pit Overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	0.01177 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	2.31616 (mg/s)
	mass flux of ground water into SW-005	M g5 =	0.07195 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	0.01475 (mg/s)
mass flux of ground water into USGS Gage	M g6 =	0.01490 (mg/s)	
mass flux of surface water into Colby Lake	M scl =	4.75398 (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	0.03708 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.00552 (mg/s)	
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M r1 =	1.2010 (mg/s)
	mass flux in river at SW-002	M r2 =	2.4378 (mg/s)
	mass flux in river at SW-003	M r3 =	3.2257 (mg/s)
	mass flux in river at SW-004	M r4 =	4.0191 (mg/s)
	mass flux in river at SW-004A	M r4A =	13.0140 (mg/s)
	mass flux in river at SW-005	M r5 =	15.4021 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M r6 =	15.4318 (mg/s)
	mass flux into Colby Lake	M cl =	20.2284 (mg/s)
	High Flow		
	concentration in river at SW-001	C r1 =	0.00050 (mg/L)
	concentration in river at SW-002	C r2 =	0.00050 (mg/L)
	concentration in river at SW-003	C r3 =	0.00050 (mg/L)
	concentration in river at SW-004	C r4 =	0.00050 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00050 (mg/L)
	concentration in river at SW-005	C r5 =	0.00050 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00050 (mg/L)
	concentration in Colby Lake (H)	C cl =	0.00052 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case	Year 20		
Parameter	Antimony		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0015 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0015 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0015 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0015 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0015 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0015 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0015 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0015 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0015 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0015 (mg/L)
	concentration of surface water runoff from mine site	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0015 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0015 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0015 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0015 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0015 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0015 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0015 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0015 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.0800 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.0800 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0800 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0800 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.0337 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0003 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.0004 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.0800 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.0800 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.0800 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0800 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0337 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0003 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0015 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0015 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0015 (mg/L)
	concentration of liner leakage from WWTF pond	C gWTFp =	0.0262 (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M s1 =	3.57302 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.00764 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.04245 (mg/s)
	mass flux of surface water into SW-002	M s2 =	3.68600 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.01094 (mg/s)
	mass flux of surface water into SW-003	M s3 =	2.35310 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.00432 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.00048 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00041 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	2.34375 (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.01290 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00041 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00025 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00021 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.00065 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.00016 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00001 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	26.81818 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.05863 (mg/s)
	mass flux of West Pit Overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	0.05136 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	0.00189 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	6.94848 (mg/s)
	mass flux of ground water into SW-005	M g5 =	0.09636 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	0.04424 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.01995 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	14.26193 (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	0.04967 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.01656 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M r1 =	3.6231 (mg/s)
	mass flux in river at SW-002	M r2 =	7.3200 (mg/s)
	mass flux in river at SW-003	M r3 =	9.6784 (mg/s)
	mass flux in river at SW-004	M r4 =	12.0367 (mg/s)
	mass flux in river at SW-004A	M r4A =	38.9668 (mg/s)
	mass flux in river at SW-005	M r5 =	46.0116 (mg/s)
	mass flux in river at USGS Gage	M r6 =	46.0758 (mg/s)
	mass flux into Colby Lake	M cl =	60.4039 (mg/s)
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C r1 =	0.00150 (mg/L)
	concentration in river at SW-002	C r2 =	0.00150 (mg/L)
	concentration in river at SW-003	C r3 =	0.00150 (mg/L)
	concentration in river at SW-004	C r4 =	0.00150 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00150 (mg/L)
	concentration in river at SW-005	C r5 =	0.00150 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00150 (mg/L)
	concentration in Colby Lake (H)	C cl =	0.00151 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case	Year 20		
Parameter	Selenium		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0005 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0005 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0005 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0005 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0005 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0005 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0005 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0005 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0005 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0005 (mg/L)
	concentration of surface water runoff from mine site	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0019 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0019 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0019 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0019 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0019 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0019 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0019 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0019 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.0029 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.0029 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0029 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0029 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.0029 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0004 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.0019 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.0029 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.0029 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.0029 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0029 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0029 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0004 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0019 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0019 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0019 (mg/L)
	concentration of liner leakage from WWTF pond	C gWTFp =	0.0022 (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M s1 =	1.19101 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.00973 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.01415 (mg/s)
	mass flux of surface water into SW-002	M s2 =	1.22867 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.01393 (mg/s)
	mass flux of surface water into SW-003	M s3 =	0.78437 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.00550 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.00002 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	0.78125 (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.01642 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00001 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00002 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.00096 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.00024 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00000 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	8.93939 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.07466 (mg/s)
	mass flux of West Pit Overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	0.00186 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	0.00900 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	2.31616 (mg/s)
	mass flux of ground water into SW-005	M g5 =	0.12270 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	0.01475 (mg/s)
mass flux of ground water into USGS Gage	M g6 =	0.02540 (mg/s)	
mass flux of surface water into Colby Lake	M scl =	4.75398 (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	0.06324 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.00552 (mg/s)	
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M r1 =	1.2149 (mg/s)
	mass flux in river at SW-002	M r2 =	2.4575 (mg/s)
	mass flux in river at SW-003	M r3 =	3.2474 (mg/s)
	mass flux in river at SW-004	M r4 =	4.0463 (mg/s)
	mass flux in river at SW-004A	M r4A =	13.0712 (mg/s)
	mass flux in river at SW-005	M r5 =	15.5101 (mg/s)
	mass flux in river at USGS Gage	M r6 =	15.5502 (mg/s)
mass flux into Colby Lake	M cl =	20.3730 (mg/s)	
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C r1 =	0.00050 (mg/L)
	concentration in river at SW-002	C r2 =	0.00050 (mg/L)
	concentration in river at SW-003	C r3 =	0.00050 (mg/L)
	concentration in river at SW-004	C r4 =	0.00050 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00050 (mg/L)
	concentration in river at SW-005	C r5 =	0.00051 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00051 (mg/L)
concentration in Colby Lake (H)	C cl =	0.00054 (mg/L)	

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case	Year 20		
Parameter	Sulfate		
Input concentration data	concentration of surface water into SW-001	C s1 =	9.0000 (mg/L)
	concentration of surface water into SW-002	C s2 =	9.0000 (mg/L)
	concentration of surface water into SW-003	C s3 =	9.0000 (mg/L)
	concentration of surface water into SW-004	C s4 =	9.0000 (mg/L)
	concentration of surface water into SW-004A	C s4A =	9.0000 (mg/L)
	concentration of surface water into SW-005	C s5 =	9.0000 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	9.0000 (mg/L)
	concentration of surface water into Colby Lake	C scl =	9.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	9.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	22.0000 (mg/L)
	concentration of surface water runoff from mine site	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	16.1300 (mg/L)
	concentration of ground water into SW-002	C g2 =	16.1300 (mg/L)
	concentration of ground water into SW-003	C g3 =	16.1300 (mg/L)
	concentration of ground water into SW-004	C g4 =	16.1300 (mg/L)
	concentration of ground water into SW-004A	C g4A =	16.1300 (mg/L)
	concentration of ground water into SW-005	C g5 =	16.1300 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	16.1300 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	16.1300 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	592.8026 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	863.8244 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	1,139.7029 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	2,340.0000 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	7,161.1291 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	35.1700 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	68.3000 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	592.8026 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	863.8244 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	1,139.7029 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	2,340.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	7,161.1291 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	35.1700 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	16.1300 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	16.1300 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	16.1300 (mg/L)
	concentration of liner leakage from WWTF pond	C gWTFp =	490.1065 (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	21,438.09900 (mg/s)
	mass flux of ground water into SW-001	M g1 =	82.16622 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	622.60000 (mg/s)
	mass flux of surface water into SW-002	M s2 =	22,115.97619 (mg/s)
	mass flux of ground water into SW-002	M g2 =	117.67506 (mg/s)
	mass flux of surface water into SW-003	M s3 =	14,118.61548 (mg/s)
	mass flux of ground water into SW-003	M g3 =	46.44826 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	5.14758 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	5.83713 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00070 (mg/s)
	mass flux of surface water into SW-004	M s4 =	14,062.47531 (mg/s)
	mass flux of ground water into SW-004	M g4 =	138.69170 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	5.83713 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	7.18950 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	43.54291 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	76.11262 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00088 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00164 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00954 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	18.81988 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00614 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.01315 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.22527 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	160,909.09687 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	630.46901 (mg/s)
	mass flux of West Pit Overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	380.61616 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.01299 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	323.49893 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	41,690.85849 (mg/s)
	mass flux of ground water into SW-005	M g5 =	1,036.20733 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	265.42317 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	214.54513 (mg/s)
mass flux of surface water into Colby Lake	M scl =	85,571.55900 (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	534.08043 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	99.33300 (mg/s)	
Mass balance at each node			High Flow
	mass flux in river at SW-001	M r1 =	22,142.8652 (mg/s)
	mass flux in river at SW-002	M r2 =	44,376.5165 (mg/s)
	mass flux in river at SW-003	M r3 =	58,552.5656 (mg/s)
	mass flux in river at SW-004	M r4 =	72,905.4920 (mg/s)
	mass flux in river at SW-004A	M r4A =	235,149.1859 (mg/s)
	mass flux in river at SW-005	M r5 =	277,876.2518 (mg/s)
mass flux in river at USGS Gage	M r6 =	278,356.2201 (mg/s)	
mass flux into Colby Lake	M cl =	364,561.1925 (mg/s)	
Convert mass flux to concentration			High Flow
	concentration in river at SW-001	C r1 =	9.16735 (mg/L)
	concentration in river at SW-002	C r2 =	9.09349 (mg/L)
	concentration in river at SW-003	C r3 =	9.07514 (mg/L)
	concentration in river at SW-004	C r4 =	9.08355 (mg/L)
	concentration in river at SW-004A	C r4A =	9.06185 (mg/L)
	concentration in river at SW-005	C r5 =	9.06732 (mg/L)
	concentration in river at USGS Gage	C r6 =	9.07032 (mg/L)
	concentration in Colby Lake (H)	C cl =	9.37875 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case	Year 20		
Parameter	Thallium		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0004 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0004 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0004 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0004 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0004 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0004 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0004 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0004 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0004 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0003 (mg/L)
	concentration of surface water runoff from mine site	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0000 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0000 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0000 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0000 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0000 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0000 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0000 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0000 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0000 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	0.0001 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0000 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0000 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	0.0001 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0000 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0000 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0000 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0000 (mg/L)
	concentration of liner leakage from WWTF pond	C gWTFp =	0.0012 (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M s1 =	0.95280 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.00002 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.00809 (mg/s)
	mass flux of surface water into SW-002	M s2 =	0.98293 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.00003 (mg/s)
	mass flux of surface water into SW-003	M s3 =	0.62749 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.00001 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	0.62500 (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.00003 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	0.00009 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	0.00002 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	0.00000 (mg/s)
	mass flux of surface water into SW-004A	M s4A =	7.15152 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.00016 (mg/s)
	mass flux of West Pit Overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	1.85293 (mg/s)
	mass flux of ground water into SW-005	M g5 =	0.00026 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	0.01180 (mg/s)
mass flux of ground water into USGS Gage	M g6 =	0.00005 (mg/s)	
mass flux of surface water into Colby Lake	M scl =	3.80318 (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	0.00013 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.00441 (mg/s)	
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M r1 =	0.9609 (mg/s)
	mass flux in river at SW-002	M r2 =	1.9439 (mg/s)
	mass flux in river at SW-003	M r3 =	2.5714 (mg/s)
	mass flux in river at SW-004	M r4 =	3.1965 (mg/s)
	mass flux in river at SW-004A	M r4A =	10.3482 (mg/s)
	mass flux in river at SW-005	M r5 =	12.2014 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M r6 =	12.2132 (mg/s)
	mass flux into Colby Lake	M cl =	16.0210 (mg/s)
	High Flow		
	concentration in river at SW-001	C r1 =	0.00040 (mg/L)
	concentration in river at SW-002	C r2 =	0.00040 (mg/L)
	concentration in river at SW-003	C r3 =	0.00040 (mg/L)
	concentration in river at SW-004	C r4 =	0.00040 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00040 (mg/L)
	concentration in river at SW-005	C r5 =	0.00040 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00040 (mg/L)
	concentration in Colby Lake (H)	C cl =	0.00039 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case		Year 20	
Parameter		Vanadium	
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0009 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0009 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0009 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0009 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0009 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0009 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0009 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0009 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0009 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0043 (mg/L)
	concentration of surface water runoff from mine site	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0043 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0043 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0043 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0043 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0043 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0043 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0043 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0043 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0914 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.1332 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.1757 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	0.3103 (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	0.0173 (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	0.0017 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.0014 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0914 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.1332 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.1757 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	0.3103 (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	0.0173 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0017 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0043 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0043 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0043 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	0.0719 (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M_s1 =	2.14381 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.02190 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.12169 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	2.21160 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.03137 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	1.41186 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.01238 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00079 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00090 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	1.40625 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.03697 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	#N/A (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00090 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	0.00095 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	0.00010 (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	0.00374 (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	0.00000 (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	0.00000 (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	0.00093 (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	0.00000 (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	0.00000 (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	0.00000 (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	0.00003 (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	16.09091 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.16807 (mg/s)
	mass flux of West Pit Overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.05867 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.00663 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	4.16909 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.27624 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.02654 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.05719 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	8.55716 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.14238 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00993 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	2.2874 (mg/s)
	mass flux in river at SW-002	M_r2 =	4.5304 (mg/s)
	mass flux in river at SW-003	M_r3 =	5.9563 (mg/s)
	mass flux in river at SW-004	M_r4 =	7.4062 (mg/s)
	mass flux in river at SW-004A	M_r4A =	23.7305 (mg/s)
	mass flux in river at SW-005	M_r5 =	28.1758 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	28.2595 (mg/s)
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C_r1 =	0.00095 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00093 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00092 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00092 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00091 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00092 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00092 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.00103 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case	Year 20		
Parameter	Zinc		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0160 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0160 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0160 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0160 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0160 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0160 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0160 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0160 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0620 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0073 (mg/L)
	concentration of surface water runoff from mine site	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0275 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0275 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0275 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0275 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0275 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0275 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0275 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0275 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	#N/A (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.0900 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.0900 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0900 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	0.0900 (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	26.0000 (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	0.0046 (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.0030 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.0900 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.0900 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.0900 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	0.0900 (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	26.0000 (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0046 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0275 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0275 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0275 (mg/L)
	concentration of liner leakage from WWTF ponc	C gWTFp =	0.0505 (mg/L)
	Convert concentration to mass flux	High Flow	
mass flux of surface water into SW-001		M s1 =	38.11218 (mg/s)
mass flux of ground water into SW-001		M g1 =	0.14009 (mg/s)
mass flux of surface discharges from upstream of PM-1		M sns =	0.20744 (mg/s)
mass flux of surface water into SW-002		M s2 =	39.31729 (mg/s)
mass flux of ground water into SW-002		M g2 =	0.20062 (mg/s)
mass flux of surface water into SW-003		M s3 =	25.09976 (mg/s)
mass flux of ground water into SW-003		M g3 =	0.07919 (mg/s)
mass flux of seepage from East Pit to SW-003		M gep_003 =	#N/A (mg/s)
mass flux of liner leakage from Cat 2/3 stockpile to SW-003		M gC3_003 =	0.00054 (mg/s)
mass flux of liner leakage from Cat 3LO stockpile to SW-003		M gC3LO_003 =	0.00046 (mg/s)
mass flux of liner leakage from Cat 2/3 sumps to SW-003		M gC3s_003 =	0.00000 (mg/s)
mass flux of surface water into SW-004		M s4 =	24.99996 (mg/s)
mass flux of ground water into SW-004		M g4 =	0.23646 (mg/s)
mass flux of seepage from East Pit to SW-004		M gep_004 =	#N/A (mg/s)
mass flux of seepage from West Pit		M gwp =	#N/A (mg/s)
mass flux of liner leakage from Cat 2/3 stockpile to SW-004		M gC3_004 =	- (mg/s)
mass flux of liner leakage from Cat 3LO stockpile to SW-004		M gC3LO_004 =	0.00046 (mg/s)
mass flux of liner leakage from Cat 4 stockpile		M gC4 =	0.00028 (mg/s)
mass flux of liner leakage from LOSP		M gC4LO =	0.15809 (mg/s)
mass flux of seepage from Overburden (Storage)		M gOS =	0.00987 (mg/s)
mass flux of liner leakage from Cat 3LO sumps to SW-004		M gC3LOs_004 =	0.00000 (mg/s)
mass flux of liner leakage from Cat 4 sumps		M gC4s =	0.00000 (mg/s)
mass flux of liner leakage from LOSP sumps		M gC4LOs =	0.00003 (mg/s)
mass flux of seepage from Overburden Ponds - PW1		M gOp1 =	0.00244 (mg/s)
mass flux of leakage from Haul Road Pond - PW2		M gHRp2 =	0.00001 (mg/s)
mass flux of leakage from Haul Road Pond - PW4		M gHRp4 =	0.00002 (mg/s)
mass flux of leakage from RTH Pond - PW3		M gRTHp =	0.00000 (mg/s)
mass flux of liner leakage from WWTF pond		M gWTFp =	0.00002 (mg/s)
mass flux of surface water into SW-004A		M s4A =	286.06062 (mg/s)
mass flux of ground water into SW-004A		M g4A =	1.07489 (mg/s)
mass flux of West Pit Overflow		M sms =	#N/A (mg/s)
mass flux of liner leakage from Cat 1 stockpile		M gC12 =	0.05779 (mg/s)
mass flux of liner leakage from Cat 1 sumps		M gC12s =	0.00000 (mg/s)
mass flux of seepage from Overburden (Cat 1)		M gO12 =	0.01421 (mg/s)
mass flux of seepage from Overburden Pond - PW7		M gOp7 =	#N/A (mg/s)
mass flux of surface water into SW-005		M s5 =	74.11708 (mg/s)
mass flux of ground water into SW-005		M g5 =	1.76663 (mg/s)
mass flux of surface water into USGS Gage		M s6 =	0.47186 (mg/s)
mass flux of ground water into USGS Gage		M g6 =	0.36578 (mg/s)
mass flux of surface water into Colby Lake	M scl =	152.12722 (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	0.91055 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.68429 (mg/s)	
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M r1 =	38.4597 (mg/s)
	mass flux in river at SW-002	M r2 =	77.9776 (mg/s)
	mass flux in river at SW-003	M r3 =	103.1576 (mg/s)
	mass flux in river at SW-004	M r4 =	128.5652 (mg/s)
	mass flux in river at SW-004A	M r4A =	415.7727 (mg/s)
	mass flux in river at SW-005	M r5 =	491.6564 (mg/s)
	mass flux in river at USGS Gage	M r6 =	492.4941 (mg/s)
	mass flux into Colby Lake	M cl =	646.2161 (mg/s)
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C r1 =	0.01592 (mg/L)
	concentration in river at SW-002	C r2 =	0.01598 (mg/L)
	concentration in river at SW-003	C r3 =	0.01599 (mg/L)
	concentration in river at SW-004	C r4 =	0.01602 (mg/L)
	concentration in river at SW-004A	C r4A =	0.01602 (mg/L)
	concentration in river at SW-005	C r5 =	0.01604 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.01605 (mg/L)
	concentration in Colby Lake (H)	C cl =	0.01641 (mg/L)

***Appendix H.14***  
***Partridge River***  
***Reasonable Alternative***  
***Closure***



## Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

### FLOWS

Case	Closure			
Flows	Low Flow Conditions (no surface runoff)			
Total flow in Partridge River	flow in river at SW-001	Q_r1_L =	1.18	(cfs)
	flow in river at SW-002	Q_r2_L =	1.44	(cfs)
	flow in river at SW-003	Q_r3_L =	1.55	(cfs)
	flow in river at SW-004	Q_r4_L =	1.87	(cfs)
	flow in river at SW-004A	Q_r4a_L =	3.30	(cfs)
	flow in river at SW-005	Q_r5_L =	5.57	(cfs)
	flow in river at USGS Gage	Q_r6_L =	6.04	(cfs)
	total flow into Colby Lake	Q_cl_L =	7.60	(cfs)
	flow check	Q_ck_L =	7.60	(cfs)
Input flow data	surface water flow into SW-001	Q_s1_L =	-	(cfs)
	surface water flow into SW-002	Q_s2_L =	-	(cfs)
	surface water flow into SW-003	Q_s3_L =	-	(cfs)
	surface water flow into SW-004	Q_s4_L =	-	(cfs)
	surface water flow into SW-004A	Q_s4a_L =	-	(cfs)
	surface water flow into SW-005	Q_s5_L =	-	(cfs)
	surface water flow into USGS Gage	Q_s6_L =	-	(cfs)
	surface water flow into Colby Lake	Q_scl_L =	-	(cfs)
	surface water inflow from Hoyt Lakes WWTP	Q_shl_L =	0.39	(cfs)
	surface water inflow from discharges upstream of PM-1	Q_sns_L =	1.00	(cfs)
	surface water flow from West Pit overflow	Q_sms_L =	-	(cfs)
	ground water flow into SW-001	Q_g1_L =	0.18	(cfs)
	ground water flow into SW-002	Q_g2_L =	0.26	(cfs)
	ground water flow into SW-003	Q_g3_L =	0.10	(cfs)
	ground water flow into SW-004	Q_g4_L =	0.30	(cfs)
	ground water flow into SW-004A	Q_g4a_L =	1.38	(cfs)
	ground water flow into SW-005	Q_g5_L =	2.27	(cfs)
	ground water flow into USGS Gage	Q_g6_L =	0.47	(cfs)
	ground water flow into Colby Lake	Q_gcl_L =	1.17	(cfs)
	ground water seepage from East Pit to SW-003	Q_gep_003_L =	0.0112	(cfs)
	ground water seepage from East Pit to SW-004	Q_gep_004_L =	0.0112	(cfs)
	ground water seepage from West Pit	Q_gwp_L =	-	(cfs)
	ground water liner leakage from Cat 1 stockpile	Q_gC12_L =	0.0062	(cfs)
	ground water liner leakage from Cat 2/3 stockpile to SW-003	Q_gC3_003_L =	0.0000	(cfs)
	ground water liner leakage from Cat 2/3 stockpile to SW-004	Q_gC3_004_L =	-	(cfs)
	ground water liner leakage from Cat 3LO stockpile to SW-003	Q_gC3LO_003_L =	0.0000	(cfs)
	ground water liner leakage from Cat 3LO stockpile to SW-004	Q_gC3LO_004_L =	0.0000	(cfs)
	ground water liner leakage from Cat 4 stockpile	Q_gC4_L =	-	(cfs)
	ground water liner leakage from LO SP	Q_gC4LO_L =	-	(cfs)
	ground water seepage from Overburden Storage	Q_gOS_L =	-	(cfs)
	ground water seepage from Overburden (Cat 1)	Q_gO12_L =	0.0457	(cfs)
	ground water liner leakage from Cat 1 sumps	Q_gC12s_L =	0.0000	(cfs)
	ground water liner leakage from Cat 2/3 sumps	Q_gC3s_L =	0.0000	(cfs)
	ground water liner leakage from Cat 3LO sumps	Q_gC3LOs_L =	0.0000	(cfs)
	ground water liner leakage from Cat 4 sumps	Q_gC4s_L =	-	(cfs)
	ground water liner leakage from LO SP sumps	Q_gC4LOs_L =	-	(cfs)
	ground water seepage from Overburden pond - PW1	Q_gOp1_L =	-	(cfs)
	ground water seepage from Overburden pond - PW7	Q_gOp7_L =	-	(cfs)
	ground water leakage from Haul Road pond - PW2	Q_gHRp2_L =	-	(cfs)
	ground water leakage from Haul Road pond - PW4	Q_gHRp4_L =	-	(cfs)
	ground water leakage from RTH pond - PW3	Q_gRTHp_L =	-	(cfs)
	ground water liner leakage from WWTF pond	Q_gWTFp_L =	-	(cfs)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Closure Silver		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0001 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0001 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0001 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0001 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0001 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0001 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0001 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0001 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0001 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0001 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0006 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0006 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0006 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0006 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0006 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0006 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0006 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0006 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.0003 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0007 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0007 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0007 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0007 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0007 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0007 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	- (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0006 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0006 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0006 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00280 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.00340 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.00401 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00158 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.00011 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.00473 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.00011 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.02150 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.00012 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.03533 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.00732 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.01821 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00110 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	0.0062 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.0102 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.0119 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.0167 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.0384 (mg/s)
	mass flux in river at SW-005	M_r5 =	0.0737 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	0.0810 (mg/s)
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C_r1 =	0.00019 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00025 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00027 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00032 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00041 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00047 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00047 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.00015 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Closure Aluminum		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0700 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0700 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0700 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0700 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0700 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0700 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0700 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0700 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0700 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0173 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.1250 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.1250 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.1250 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.1250 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.1250 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.1250 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.1250 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.1250 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.1069 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	1.6800 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	1.6800 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	1.6800 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.1400 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	1.6800 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	1.6800 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	1.6800 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.4106 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.1250 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.1250 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.1250 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.63675 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.48959 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.91193 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.35995 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.03373 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00095 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00015 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	1.07480 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.03373 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00015 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	4.88584 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.29442 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00004 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.18099 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	8.03013 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	1.66263 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	4.13888 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.77259 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	1.1263 (mg/s)
	mass flux in river at SW-002	M_r2 =	2.0383 (mg/s)
	mass flux in river at SW-003	M_r3 =	2.4331 (mg/s)
	mass flux in river at SW-004	M_r4 =	3.5417 (mg/s)
	mass flux in river at SW-004A	M_r4A =	8.9030 (mg/s)
	mass flux in river at SW-005	M_r5 =	16.9332 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	18.9958 (mg/s)
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C_r1 =	0.03373 (mg/L)
	concentration in river at SW-002	C_r2 =	0.05009 (mg/L)
	concentration in river at SW-003	C_r3 =	0.05544 (mg/L)
	concentration in river at SW-004	C_r4 =	0.06708 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.09537 (mg/L)
	concentration in river at SW-005	C_r5 =	0.10745 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.10881 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.07565 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Closure Arsenic		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0021 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0021 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0021 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0021 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0021 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0021 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0021 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0021 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0021 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0065 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0022 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0022 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0022 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0022 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0022 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0022 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0022 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0022 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.0177 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.4854 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.7070 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.7100 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.0027 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.4854 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.7070 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.7100 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0016 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0022 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0022 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0022 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.01100 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.18395 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.01576 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00622 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.00559 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00040 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00006 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.01857 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.00559 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00006 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.08443 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.08506 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.00349 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.13876 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.02873 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.07152 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.02329 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	0.1950 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.2107 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.2230 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.2472 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.4202 (mg/s)
	mass flux in river at SW-005	M_r5 =	0.5590 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	0.5877 (mg/s)
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C_r1 =	0.00584 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00518 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00508 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00468 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00450 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00355 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00344 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.00226 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Closure Boron		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0450 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0450 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0450 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0450 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0450 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0450 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0450 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0450 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0450 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0960 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0870 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0870 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0870 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0870 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0870 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0870 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0870 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0870 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	0.4226 (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.7600 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.7600 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.7600 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.0370 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.7600 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.7600 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.7600 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0622 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0870 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0870 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0870 (mg/L)
	concentration of liner leakage from WWTF ponc	C gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M s1 =	- (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.44318 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	2.71680 (mg/s)
	mass flux of surface water into SW-002	M s2 =	- (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.63470 (mg/s)
	mass flux of surface water into SW-003	M s3 =	- (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.25053 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	0.13335 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.00043 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00007 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	- (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.74806 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	0.13335 (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00007 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M g4A =	3.40055 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	0.13319 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00002 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	0.04783 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	- (mg/s)
	mass flux of ground water into SW-005	M g5 =	5.58897 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	1.15719 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	2.88066 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.49667 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M r1 =	3.1800 (mg/s)
	mass flux in river at SW-002	M r2 =	3.7947 (mg/s)
	mass flux in river at SW-003	M r3 =	4.7791 (mg/s)
	mass flux in river at SW-004	M r4 =	5.0605 (mg/s)
	mass flux in river at SW-004A	M r4A =	8.6421 (mg/s)
	mass flux in river at SW-005	M r5 =	14.2311 (mg/s)
	mass flux in river at USGS Gage	M r6 =	15.3853 (mg/s)
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C r1 =	0.09463 (mg/L)
	concentration in river at SW-002	C r2 =	0.09326 (mg/L)
	concentration in river at SW-003	C r3 =	0.09523 (mg/L)
	concentration in river at SW-004	C r4 =	0.09584 (mg/L)
	concentration in river at SW-004A	C r4A =	0.09257 (mg/L)
	concentration in river at SW-005	C r5 =	0.09030 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.09004 (mg/L)
	concentration in Colby Lake (H	C cl =	0.05107 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Closure Barium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0077 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0077 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0077 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0077 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0077 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0077 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0077 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0077 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0077 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0050 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0219 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0219 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0219 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0219 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0219 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0219 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0219 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0219 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.0480 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.1900 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.1900 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.1900 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.0140 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.1900 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.1900 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.1900 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0168 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0219 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0219 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0219 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.11166 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.14150 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.15992 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.06312 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.01515 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00011 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00002 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.18848 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.01515 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00002 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.85678 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.03330 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.01810 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	1.40816 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.29156 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.72579 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.08476 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	0.2532 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.4131 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.4915 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.6951 (mg/s)
	mass flux in river at SW-004A	M_r4A =	1.6033 (mg/s)
	mass flux in river at SW-005	M_r5 =	3.0115 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	3.3030 (mg/s)
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C_r1 =	0.00758 (mg/L)
	concentration in river at SW-002	C_r2 =	0.01015 (mg/L)
	concentration in river at SW-003	C_r3 =	0.01120 (mg/L)
	concentration in river at SW-004	C_r4 =	0.01317 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.01717 (mg/L)
	concentration in river at SW-005	C_r5 =	0.01911 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.01933 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.00932 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Closure Beryllium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0001 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0001 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0001 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0001 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0001 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0001 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0001 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0001 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0001 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0001 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0001 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0001 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0001 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0001 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0001 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0001 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0001 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0001 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.0003 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0002 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0002 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	- (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0001 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0001 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0001 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00074 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.00283 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.00106 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00042 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.00009 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.00125 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.00009 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.00567 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.00004 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.00931 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.00193 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.00480 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00110 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	0.0036 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.0046 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.0051 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.0065 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.0122 (mg/s)
	mass flux in river at SW-005	M_r5 =	0.0215 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	0.0234 (mg/s)
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C_r1 =	0.00011 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00011 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00012 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00012 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00013 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00014 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00014 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.00011 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Closure Calcium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	17.0000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	17.0000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	17.0000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	17.0000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	17.0000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	17.0000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	17.0000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	17.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	17.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	24.5000 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	14.7900 (mg/L)
	concentration of ground water into SW-002	C_g2 =	14.7900 (mg/L)
	concentration of ground water into SW-003	C_g3 =	14.7900 (mg/L)
	concentration of ground water into SW-004	C_g4 =	14.7900 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	14.7900 (mg/L)
	concentration of ground water into SW-005	C_g5 =	14.7900 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	14.7900 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	14.7900 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	167.2978 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	540.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	540.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	540.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	15.8000 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	540.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	540.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	540.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	9.3700 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	14.7900 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	14.7900 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	14.7900 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	75.34026 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	693.35000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	107.89920 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	42.58957 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	52.78997 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.30659 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.04900 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00044 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	127.16988 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	52.78997 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.04900 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00042 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	578.09279 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	94.63370 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.01183 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	20.42604 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	950.12439 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	196.72179 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	489.71169 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	187.62900 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	768.6903 (mg/s)
	mass flux in river at SW-002	M_r2 =	876.5895 (mg/s)
	mass flux in river at SW-003	M_r3 =	972.3250 (mg/s)
	mass flux in river at SW-004	M_r4 =	1,152.3347 (mg/s)
	mass flux in river at SW-004A	M_r4A =	1,845.4991 (mg/s)
	mass flux in river at SW-005	M_r5 =	2,795.6235 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	2,992.3453 (mg/s)
	mass flux into Colby Lake	M_cl =	3,669.6860 (mg/s)
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C_r1 =	23.01881 (mg/L)
	concentration in river at SW-002	C_r2 =	21.54343 (mg/L)
	concentration in river at SW-003	C_r3 =	22.15608 (mg/L)
	concentration in river at SW-004	C_r4 =	21.82483 (mg/L)
	concentration in river at SW-004A	C_r4A =	19.76882 (mg/L)
	concentration in river at SW-005	C_r5 =	17.73929 (mg/L)
	concentration in river at USGS Gage	C_r6 =	17.50974 (mg/L)
	concentration in Colby Lake (H)	C_cl =	17.00913 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Closure Cadmium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0001 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0001 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0001 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0001 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0001 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0001 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0001 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0001 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0001 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0001 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0001 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0001 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0001 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0001 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0001 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0001 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0001 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0001 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.0015 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0002 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0002 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0001 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0001 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0001 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0001 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00051 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.00283 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.00073 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00029 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.00047 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.00086 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.00047 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.00391 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.00003 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.00642 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.00133 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.00331 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00110 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	0.0033 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.0041 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.0048 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.0062 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.0101 (mg/s)
	mass flux in river at SW-005	M_r5 =	0.0165 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	0.0179 (mg/s)
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C_r1 =	0.00010 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00010 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00011 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00012 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00011 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00010 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00010 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.00010 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Closure Chloride		
Input concentration data	concentration of surface water into SW-001	C_s1 =	8.0000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	8.0000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	8.0000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	8.0000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	8.0000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	8.0000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	8.0000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	8.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	8.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	1.6000 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	6.6000 (mg/L)
	concentration of ground water into SW-002	C_g2 =	6.6000 (mg/L)
	concentration of ground water into SW-003	C_g3 =	6.6000 (mg/L)
	concentration of ground water into SW-004	C_g4 =	6.6000 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	6.6000 (mg/L)
	concentration of ground water into SW-005	C_g5 =	6.6000 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	6.6000 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	6.6000 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	158.4350 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	- (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	- (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	- (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	2.3300 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	- (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	- (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	- (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	5.3500 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	6.6000 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	6.6000 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	6.6000 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	33.62040 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	45.28000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	48.14975 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	19.00549 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	49.99338 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	- (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	- (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	56.74924 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	49.99338 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	- (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	- (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	257.97244 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	- (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	3.01219 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	423.99060 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	87.78660 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	218.53260 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	88.29600 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	78.9004 (mg/s)
	mass flux in river at SW-002	M_r2 =	127.0501 (mg/s)
	mass flux in river at SW-003	M_r3 =	196.0490 (mg/s)
	mass flux in river at SW-004	M_r4 =	302.7916 (mg/s)
	mass flux in river at SW-004A	M_r4A =	563.7763 (mg/s)
	mass flux in river at SW-005	M_r5 =	987.7669 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	1.075.5535 (mg/s)
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C_r1 =	2.36271 (mg/L)
	concentration in river at SW-002	C_r2 =	3.12244 (mg/L)
	concentration in river at SW-003	C_r3 =	4.46731 (mg/L)
	concentration in river at SW-004	C_r4 =	5.73477 (mg/L)
	concentration in river at SW-004A	C_r4A =	6.03912 (mg/L)
	concentration in river at SW-005	C_r5 =	6.26775 (mg/L)
	concentration in river at USGS Gage	C_r6 =	6.29361 (mg/L)
	concentration in Colby Lake (H)	C_cl =	7.77362 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Closure Cobalt		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0005 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0005 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0005 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0005 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0005 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0005 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0005 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0005 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0005 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0005 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0017 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0017 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0017 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0017 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0017 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0017 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0017 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0017 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.0009 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0520 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0520 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0520 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.0013 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0520 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0520 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0520 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0011 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0017 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0017 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0017 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00841 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.01415 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.01204 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00475 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.00027 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00003 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.01419 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.00027 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.06449 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.00911 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.00168 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.10600 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.02195 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.05463 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00552 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	0.0226 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.0346 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.0396 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.0541 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.1294 (mg/s)
	mass flux in river at SW-005	M_r5 =	0.2354 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	0.2573 (mg/s)
	mass flux into Colby Lake	M_cl =	0.3175 (mg/s)
	Low Flow		
	concentration in river at SW-001	C_r1 =	0.00068 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00085 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00090 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00102 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00139 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00149 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00151 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.00064 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Closure Copper		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0017 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0017 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0017 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0017 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0017 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0017 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0017 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0017 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0190 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0012 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0030 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0030 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0030 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0030 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0030 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0030 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0030 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0030 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.0103 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0920 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0920 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0920 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.0170 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0920 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0920 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0920 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0214 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0030 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0030 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0030 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.01503 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.03509 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.02152 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00849 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.00325 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00005 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.02537 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.00325 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.11531 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.01612 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.02198 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.18951 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.03924 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.09768 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.20970 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	0.0501 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.0716 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.0834 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.1121 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.2655 (mg/s)
	mass flux in river at SW-005	M_r5 =	0.4550 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	0.4942 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	0.8016 (mg/s)
	Low Flow		
	concentration in river at SW-001	C_r1 =	0.00150 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00176 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00190 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00212 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00284 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00289 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00289 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.00199 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Closure Fluoride		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0700 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0700 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0700 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0700 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0700 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0700 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0700 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0700 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0700 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.1400 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.2800 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.2800 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.2800 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.2800 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.2800 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.2800 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.2800 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.2800 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.6061 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0621 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0621 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0621 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.4200 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0621 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0621 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0621 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.2239 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.2800 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.2800 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.2800 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	1.42632 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	3.96200 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	2.04272 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.80629 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.19124 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00004 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	2.40754 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.19124 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	10.94429 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.01088 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.54297 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	17.98748 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	3.72428 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	9.27108 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.77259 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	5.3883 (mg/s)
	mass flux in river at SW-002	M_r2 =	7.4310 (mg/s)
	mass flux in river at SW-003	M_r3 =	8.4286 (mg/s)
	mass flux in river at SW-004	M_r4 =	11.0274 (mg/s)
	mass flux in river at SW-004A	M_r4A =	22.5255 (mg/s)
	mass flux in river at SW-005	M_r5 =	40.5130 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	44.2373 (mg/s)
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C_r1 =	0.16136 (mg/L)
	concentration in river at SW-002	C_r2 =	0.18263 (mg/L)
	concentration in river at SW-003	C_r3 =	0.19206 (mg/L)
	concentration in river at SW-004	C_r4 =	0.20886 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.24129 (mg/L)
	concentration in river at SW-005	C_r5 =	0.25707 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.25886 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.09623 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Closure Iron		
Input concentration data	concentration of surface water into SW-001	C_s1 =	1.6000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	1.6000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	1.6000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	1.6000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	1.6000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	1.6000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	1.6000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	1.6000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	1.6000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0300 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	2.8440 (mg/L)
	concentration of ground water into SW-002	C_g2 =	2.8440 (mg/L)
	concentration of ground water into SW-003	C_g3 =	2.8440 (mg/L)
	concentration of ground water into SW-004	C_g4 =	2.8440 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	2.8440 (mg/L)
	concentration of ground water into SW-005	C_g5 =	2.8440 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	2.8440 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	2.8440 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.8295 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.8100 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.8100 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.8100 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.1500 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.8100 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.8100 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.8100 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.2255 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	2.8440 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	2.8440 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	2.8440 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	14.48734 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.84900 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	20.74816 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	8.18964 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.26174 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00046 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00007 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	24.45376 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.26174 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00007 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	111.16267 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.14195 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00002 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.19392 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	182.70140 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	37.82804 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	94.16768 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	17.65920 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	15.3363 (mg/s)
	mass flux in river at SW-002	M_r2 =	36.0845 (mg/s)
	mass flux in river at SW-003	M_r3 =	44.5364 (mg/s)
	mass flux in river at SW-004	M_r4 =	69.2520 (mg/s)
	mass flux in river at SW-004A	M_r4A =	180.7505 (mg/s)
	mass flux in river at SW-005	M_r5 =	363.4520 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	401.2800 (mg/s)
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C_r1 =	0.45925 (mg/L)
	concentration in river at SW-002	C_r2 =	0.88683 (mg/L)
	concentration in river at SW-003	C_r3 =	1.01484 (mg/L)
	concentration in river at SW-004	C_r4 =	1.31161 (mg/L)
	concentration in river at SW-004A	C_r4A =	1.93618 (mg/L)
	concentration in river at SW-005	C_r5 =	2.30624 (mg/L)
	concentration in river at USGS Gage	C_r6 =	2.34809 (mg/L)
	concentration in Colby Lake (H)	C_cl =	1.71262 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Closure Hardness		
Input concentration data	concentration of surface water into SW-001	C_s1 =	110.0000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	110.0000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	110.0000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	110.0000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	110.0000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	110.0000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	110.0000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	110.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	110.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	110.0000 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	66.4200 (mg/L)
	concentration of ground water into SW-002	C_g2 =	66.4200 (mg/L)
	concentration of ground water into SW-003	C_g3 =	66.4200 (mg/L)
	concentration of ground water into SW-004	C_g4 =	66.4200 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	66.4200 (mg/L)
	concentration of ground water into SW-005	C_g5 =	66.4200 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	66.4200 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	66.4200 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	614.8017 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	1,729.3495 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	1,729.3495 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	1,729.3495 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	71.5000 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	1,729.3495 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	1,729.3495 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	1,729.3495 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	43.5200 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	66.4200 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	66.4200 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	66.4200 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	338.34348 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	3,113.00000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	484.56154 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	191.26430 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	193.99760 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.98184 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.15692 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00139 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	571.10370 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	193.99760 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.15692 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00133 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	2,596.14083 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	303.06434 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.03789 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	92.43429 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	4,266.88722 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	883.45242 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	2,199.23262 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	1,214.07000 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	3,451.3435 (mg/s)
	mass flux in river at SW-002	M_r2 =	3,935.9050 (mg/s)
	mass flux in river at SW-003	M_r3 =	4,322.3071 (mg/s)
	mass flux in river at SW-004	M_r4 =	5,057.5680 (mg/s)
	mass flux in river at SW-004A	M_r4A =	8,079.2454 (mg/s)
	mass flux in river at SW-005	M_r5 =	12,346.1326 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	13,229.5850 (mg/s)
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C_r1 =	103.35220 (mg/L)
	concentration in river at SW-002	C_r2 =	96.73044 (mg/L)
	concentration in river at SW-003	C_r3 =	98.49114 (mg/L)
	concentration in river at SW-004	C_r4 =	96.35683 (mg/L)
	concentration in river at SW-004A	C_r4A =	86.54415 (mg/L)
	concentration in river at SW-005	C_r5 =	78.34087 (mg/L)
	concentration in river at USGS Gage	C_r6 =	77.41306 (mg/L)
	concentration in Colby Lake (H)	C_cl =	105.31445 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Closure Potassium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	1.3000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	1.3000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	1.3000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	1.3000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	1.3000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	1.3000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	1.3000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	1.3000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	1.3000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	2.7000 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	1.7500 (mg/L)
	concentration of ground water into SW-002	C_g2 =	1.7500 (mg/L)
	concentration of ground water into SW-003	C_g3 =	1.7500 (mg/L)
	concentration of ground water into SW-004	C_g4 =	1.7500 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	1.7500 (mg/L)
	concentration of ground water into SW-005	C_g5 =	1.7500 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	1.7500 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	1.7500 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	29.8851 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	49.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	49.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	49.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	4.4500 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	49.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	49.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	49.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	2.2600 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	1.7500 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	1.7500 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	1.7500 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	8.91450 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	76.41000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	12.76698 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	5.03933 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	9.43011 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.02782 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00445 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00004 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	15.04715 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	9.43011 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00445 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00004 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	68.40178 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	8.58713 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00107 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	5.75290 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	112.42175 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	23.27675 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	57.94425 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	14.34810 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	85.3245 (mg/s)
	mass flux in river at SW-002	M_r2 =	98.0915 (mg/s)
	mass flux in river at SW-003	M_r3 =	112.5932 (mg/s)
	mass flux in river at SW-004	M_r4 =	137.0750 (mg/s)
	mass flux in river at SW-004A	M_r4A =	219.8179 (mg/s)
	mass flux in river at SW-005	M_r5 =	332.2396 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	355.5164 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	427.8087 (mg/s)
	Low Flow		
	concentration in river at SW-001	C_r1 =	2.55508 (mg/L)
	concentration in river at SW-002	C_r2 =	2.41074 (mg/L)
	concentration in river at SW-003	C_r3 =	2.56563 (mg/L)
	concentration in river at SW-004	C_r4 =	2.59615 (mg/L)
	concentration in river at SW-004A	C_r4A =	2.35467 (mg/L)
	concentration in river at SW-005	C_r5 =	2.10819 (mg/L)
	concentration in river at USGS Gage	C_r6 =	2.08031 (mg/L)
	concentration in Colby Lake (H)	C_cl =	1.39939 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Closure Magnesium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	8.0000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	8.0000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	8.0000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	8.0000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	8.0000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	8.0000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	8.0000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	8.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	8.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	10.5000 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	8.0200 (mg/L)
	concentration of ground water into SW-002	C_g2 =	8.0200 (mg/L)
	concentration of ground water into SW-003	C_g3 =	8.0200 (mg/L)
	concentration of ground water into SW-004	C_g4 =	8.0200 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	8.0200 (mg/L)
	concentration of ground water into SW-005	C_g5 =	8.0200 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	8.0200 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	8.0200 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	46.8086 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	93.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	93.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	93.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	9.0100 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	93.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	93.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	93.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	4.8800 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	8.0200 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	8.0200 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	8.0200 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	40.85388 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	297.15000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	58.50924 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	23.09455 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	14.77021 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.05280 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00844 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00007 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	68.95892 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	14.77021 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00844 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00007 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	313.47560 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	16.29803 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00204 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	11.64801 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	515.21282 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	106.67402 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	265.55022 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	88.29600 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	338.0039 (mg/s)
	mass flux in river at SW-002	M_r2 =	396.5131 (mg/s)
	mass flux in river at SW-003	M_r3 =	434.4392 (mg/s)
	mass flux in river at SW-004	M_r4 =	518.1769 (mg/s)
	mass flux in river at SW-004A	M_r4A =	859.6006 (mg/s)
	mass flux in river at SW-005	M_r5 =	1,374.8134 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	1,481.4874 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	1,835.3336 (mg/s)
	Low Flow		
	concentration in river at SW-001	C_r1 =	10.12169 (mg/L)
	concentration in river at SW-002	C_r2 =	9.74487 (mg/L)
	concentration in river at SW-003	C_r3 =	9.89944 (mg/L)
	concentration in river at SW-004	C_r4 =	9.81410 (mg/L)
	concentration in river at SW-004A	C_r4A =	9.20796 (mg/L)
	concentration in river at SW-005	C_r5 =	8.72371 (mg/L)
	concentration in river at USGS Gage	C_r6 =	8.66894 (mg/L)
	concentration in Colby Lake (H)	C_cl =	8.07689 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case	Closure		
Parameter	Manganese		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.1500 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.1500 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.1500 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.1500 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.1500 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.1500 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.1500 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.1500 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.1500 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0086 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.1240 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.1240 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.1240 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.1240 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.1240 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.1240 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.1240 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.1240 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	0.0779 (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.7500 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.7500 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.7500 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.1160 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.7500 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.7500 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.7500 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.1604 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.1240 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.1240 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.1240 (mg/L)
	concentration of liner leakage from WWTF ponc	C gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M s1 =	(mg/s)
	mass flux of ground water into SW-001	M g1 =	0.63166 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.24338 (mg/s)
	mass flux of surface water into SW-002	M s2 =	(mg/s)
	mass flux of ground water into SW-002	M g2 =	0.90463 (mg/s)
	mass flux of surface water into SW-003	M s3 =	(mg/s)
	mass flux of ground water into SW-003	M g3 =	0.35707 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep 003 =	0.02457 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3 003 =	0.00043 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO 003 =	0.00007 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s 003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	(mg/s)
	mass flux of ground water into SW-004	M g4 =	1.06620 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep 004 =	0.02457 (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3 004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO 004 =	0.00007 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs 004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M g4A =	4.84675 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	0.13144 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00002 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	0.14996 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	- (mg/s)
	mass flux of ground water into SW-005	M g5 =	7.96588 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	1.64932 (mg/s)
mass flux of surface water into Colby Lake	M scl =	- (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	4.10576 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	1.65555 (mg/s)	
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M r1 =	0.8750 (mg/s)
	mass flux in river at SW-002	M r2 =	1.7797 (mg/s)
	mass flux in river at SW-003	M r3 =	2.1618 (mg/s)
	mass flux in river at SW-004	M r4 =	3.2526 (mg/s)
	mass flux in river at SW-004A	M r4A =	8.3808 (mg/s)
	mass flux in river at SW-005	M r5 =	16.3467 (mg/s)
	mass flux in river at USGS Gage	M r6 =	17.9960 (mg/s)
mass flux into Colby Lake	M cl =	23.7573 (mg/s)	
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C r1 =	0.02620 (mg/L)
	concentration in river at SW-002	C r2 =	0.04374 (mg/L)
	concentration in river at SW-003	C r3 =	0.04926 (mg/L)
	concentration in river at SW-004	C r4 =	0.06160 (mg/L)
	concentration in river at SW-004A	C r4A =	0.08977 (mg/L)
	concentration in river at SW-005	C r5 =	0.10373 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.10530 (mg/L)
concentration in Colby Lake (H	C cl =	0.14432 (mg/L)	



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Closure Sodium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	2.5000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	2.5000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	2.5000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	2.5000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	2.5000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	2.5000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	2.5000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	2.5000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	2.5000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	4.8000 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	13.3300 (mg/L)
	concentration of ground water into SW-002	C_g2 =	13.3300 (mg/L)
	concentration of ground water into SW-003	C_g3 =	13.3300 (mg/L)
	concentration of ground water into SW-004	C_g4 =	13.3300 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	13.3300 (mg/L)
	concentration of ground water into SW-005	C_g5 =	13.3300 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	13.3300 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	13.3300 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	1,144.6903 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	681.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	681.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	681.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	7.1900 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	681.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	681.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	681.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	4.6000 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	13.3300 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	13.3300 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	13.3300 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	67.90302 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	135.84000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	97.24790 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	38.38532 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	361.20131 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.38664 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.06179 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00055 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	114.61626 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	361.20131 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.06179 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00053 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	521.02615 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	119.34362 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.01492 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	9.29514 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	856.33253 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	177.30233 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	441.36963 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	27.59250 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	203.7430 (mg/s)
	mass flux in river at SW-002	M_r2 =	300.9909 (mg/s)
	mass flux in river at SW-003	M_r3 =	701.0265 (mg/s)
	mass flux in river at SW-004	M_r4 =	1,178.9070 (mg/s)
	mass flux in river at SW-004A	M_r4A =	1,826.5868 (mg/s)
	mass flux in river at SW-005	M_r5 =	2,682.9193 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	2,860.2217 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	3,329.1838 (mg/s)
	Low Flow		
	concentration in river at SW-001	C_r1 =	6.10119 (mg/L)
	concentration in river at SW-002	C_r2 =	7.39728 (mg/L)
	concentration in river at SW-003	C_r3 =	15.97408 (mg/L)
	concentration in river at SW-004	C_r4 =	22.29022 (mg/L)
	concentration in river at SW-004A	C_r4A =	19.56623 (mg/L)
	concentration in river at SW-005	C_r5 =	17.02414 (mg/L)
	concentration in river at USGS Gage	C_r6 =	16.73662 (mg/L)
	concentration in Colby Lake (H)	C_cl =	4.36389 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Closure Nickel		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0016 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0016 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0016 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0016 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0016 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0016 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0016 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0016 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0033 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0016 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0163 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0163 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0163 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0163 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0163 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0163 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0163 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0163 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.0074 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.4787 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.6973 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.8600 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.0190 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.4787 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.6973 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.8600 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0080 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0163 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0163 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0163 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.08293 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.04387 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.11877 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.04688 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.00233 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00040 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00008 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.13998 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.00233 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00008 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.63633 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.08390 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.02456 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	1.04584 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.21654 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.53905 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.03642 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	0.1268 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.2456 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.2952 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.4376 (mg/s)
	mass flux in river at SW-004A	M_r4A =	1.1824 (mg/s)
	mass flux in river at SW-005	M_r5 =	2.2263 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	2.4448 (mg/s)
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C_r1 =	0.00380 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00604 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00673 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00829 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.01267 (mg/L)
	concentration in river at SW-005	C_r5 =	0.01414 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.01431 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.00335 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Closure Lead		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0005 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0005 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0005 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0005 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0005 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0005 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0005 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0005 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0005 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0002 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0011 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0011 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0011 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0011 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0011 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0011 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0011 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0011 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.0131 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0528 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0528 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0528 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0528 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0528 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0528 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0007 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0011 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0011 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0011 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00571 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.00425 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.00817 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00323 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.00413 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00003 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.00963 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.00413 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.04378 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.00925 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.07195 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.01490 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.03708 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00552 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	0.0100 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.0181 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.0255 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.0383 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.0923 (mg/s)
	mass flux in river at SW-005	M_r5 =	0.1643 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	0.1792 (mg/s)
	mass flux into Colby Lake	M_cl =	0.2218 (mg/s)
	Low Flow		
	concentration in river at SW-001	C_r1 =	0.00030 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00045 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00058 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00074 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00099 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00104 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00105 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.00058 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Closure Antimony		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0015 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0015 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0015 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0015 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0015 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0015 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0015 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0015 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0015 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0015 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0015 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0015 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0015 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0015 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0015 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0015 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0015 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0015 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	0.0126 (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.0800 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.0800 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0800 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.0004 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.0800 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.0800 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.0800 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0003 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0015 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0015 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0015 (mg/L)
	concentration of liner leakage from WWTF pond	C gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M s1 =	(mg/s)
	mass flux of ground water into SW-001	M g1 =	0.00764 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.04245 (mg/s)
	mass flux of surface water into SW-002	M s2 =	(mg/s)
	mass flux of ground water into SW-002	M g2 =	0.01094 (mg/s)
	mass flux of surface water into SW-003	M s3 =	(mg/s)
	mass flux of ground water into SW-003	M g3 =	0.00432 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	0.00399 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.00005 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	(mg/s)
	mass flux of ground water into SW-004	M g4 =	0.01290 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	0.00399 (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	(mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	(mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	(mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	(mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	(mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M s4A =	(mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.05863 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	0.01402 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	0.00052 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	(mg/s)
	mass flux of ground water into SW-005	M g5 =	0.09636 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	(mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.01995 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	(mg/s)
	mass flux of ground water into Colby Lake	M gcl =	0.04967 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.01656 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M r1 =	0.0501 (mg/s)
	mass flux in river at SW-002	M r2 =	0.0610 (mg/s)
	mass flux in river at SW-003	M r3 =	0.0694 (mg/s)
	mass flux in river at SW-004	M r4 =	0.0863 (mg/s)
	mass flux in river at SW-004A	M r4A =	0.1595 (mg/s)
	mass flux in river at SW-005	M r5 =	0.2558 (mg/s)
	mass flux in river at USGS Gage	M r6 =	0.2758 (mg/s)
mass flux into Colby Lake	M cl =	0.3420 (mg/s)	
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C r1 =	0.00150 (mg/L)
	concentration in river at SW-002	C r2 =	0.00150 (mg/L)
	concentration in river at SW-003	C r3 =	0.00158 (mg/L)
	concentration in river at SW-004	C r4 =	0.00163 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00171 (mg/L)
	concentration in river at SW-005	C r5 =	0.00162 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00161 (mg/L)
	concentration in Colby Lake (H)	C cl =	0.00151 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Closure Selenium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0005 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0005 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0005 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0005 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0005 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0005 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0005 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0005 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0005 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0005 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0019 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0019 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0019 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0019 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0019 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0019 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0019 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0019 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.0423 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0029 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0029 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0029 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.0019 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0029 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0029 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0029 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0004 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0019 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0019 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0019 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00973 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.01415 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.01393 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00550 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.01335 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.01642 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.01335 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.07466 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.00051 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.00246 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.12270 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.02540 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.06324 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00552 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	0.0239 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.0378 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.0567 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.0864 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.1641 (mg/s)
	mass flux in river at SW-005	M_r5 =	0.2868 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	0.3122 (mg/s)
	mass flux into Colby Lake	M_cl =	0.3809 (mg/s)
	Low Flow		
	concentration in river at SW-001	C_r1 =	0.00072 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00093 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00129 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00164 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00176 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00182 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00183 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.00068 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Closure Sulfate		
Input concentration data	concentration of surface water into SW-001	C_s1 =	9.0000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	9.0000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	9.0000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	9.0000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	9.0000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	9.0000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	9.0000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	9.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	9.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	22.0000 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	16.1300 (mg/L)
	concentration of ground water into SW-002	C_g2 =	16.1300 (mg/L)
	concentration of ground water into SW-003	C_g3 =	16.1300 (mg/L)
	concentration of ground water into SW-004	C_g4 =	16.1300 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	16.1300 (mg/L)
	concentration of ground water into SW-005	C_g5 =	16.1300 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	16.1300 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	16.1300 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	334.5955 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	1,854.0847 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	2,340.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	2,340.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	68.3000 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	1,854.0847 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	2,340.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	2,340.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	35.1700 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	16.1300 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	16.1300 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	16.1300 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	82.16622 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	622.60000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	117.67506 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	46.44826 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	105.57995 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	1.32854 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.21233 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00189 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	138.69170 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	105.57995 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.21233 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00180 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	630.46901 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	324.92389 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.04063 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	88.29738 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	1,036.20733 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	214.54513 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	534.08043 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	99.33300 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	704.7662 (mg/s)
	mass flux in river at SW-002	M_r2 =	822.4413 (mg/s)
	mass flux in river at SW-003	M_r3 =	976.0122 (mg/s)
	mass flux in river at SW-004	M_r4 =	1,220.4959 (mg/s)
	mass flux in river at SW-004A	M_r4A =	2,264.2308 (mg/s)
	mass flux in river at SW-005	M_r5 =	3,300.4381 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	3,514.9833 (mg/s)
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C_r1 =	21.10458 (mg/L)
	concentration in river at SW-002	C_r2 =	20.21266 (mg/L)
	concentration in river at SW-003	C_r3 =	22.24010 (mg/L)
	concentration in river at SW-004	C_r4 =	23.11586 (mg/L)
	concentration in river at SW-004A	C_r4A =	24.25424 (mg/L)
	concentration in river at SW-005	C_r5 =	20.94253 (mg/L)
	concentration in river at USGS Gage	C_r6 =	20.56796 (mg/L)
	concentration in Colby Lake (H)	C_cl =	10.48543 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Closure Thallium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0004 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0004 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0004 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0004 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0004 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0004 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0004 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0004 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0004 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0003 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0000 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0000 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0000 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0000 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0000 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0000 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0000 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0000 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.0002 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0000 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0000 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0000 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0000 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00002 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.00089 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.00003 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00001 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.00007 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.00003 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.00007 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.00016 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.00026 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.00005 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.00013 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00441 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	0.0081 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.0081 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.0082 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.0083 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.0085 (mg/s)
	mass flux in river at SW-005	M_r5 =	0.0087 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	0.0088 (mg/s)
	mass flux into Colby Lake	M_cl =	0.0133 (mg/s)
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C_r1 =	0.00024 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00020 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00019 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00016 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00009 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00006 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00005 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.00035 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case	Closure		
Parameter	Vanadium		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0009 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0009 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0009 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0009 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0009 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0009 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0009 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0009 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0009 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0043 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0043 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0043 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0043 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0043 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0043 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0043 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0043 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0043 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	0.0558 (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.2858 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.4163 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.5495 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.0014 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.2858 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.4163 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.5495 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0017 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0043 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0043 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0043 (mg/L)
	concentration of liner leakage from WWTF pond	C gWTFp =	#N/A (mg/L)

Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M s1 =	(mg/s)
	mass flux of ground water into SW-001	M g1 =	0.02190 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.12169 (mg/s)
	mass flux of surface water into SW-002	M s2 =	(mg/s)
	mass flux of ground water into SW-002	M g2 =	0.03137 (mg/s)
	mass flux of surface water into SW-003	M s3 =	(mg/s)
	mass flux of ground water into SW-003	M g3 =	0.01238 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	0.01760 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.00024 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_00 =	0.00005 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	(mg/s)
	mass flux of ground water into SW-004	M g4 =	0.03697 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	0.01760 (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	(mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_00 =	0.00005 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_0 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	(mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	(mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	(mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	(mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M s4A =	(mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.16807 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	0.05009 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	0.00181 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	(mg/s)
	mass flux of ground water into SW-005	M g5 =	0.27624 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	(mg/s)
mass flux of ground water into USGS Gage	M g6 =	0.05719 (mg/s)	
mass flux of surface water into Colby Lake	M scl =	(mg/s)	
mass flux of ground water into Colby Lake	M gcl =	0.14238 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.00993 (mg/s)	
Low Flow			
Mass balance at each node	mass flux in river at SW-001	M r1 =	0.1436 (mg/s)
	mass flux in river at SW-002	M r2 =	0.1760 (mg/s)
	mass flux in river at SW-003	M r3 =	0.2052 (mg/s)
	mass flux in river at SW-004	M r4 =	0.2599 (mg/s)
	mass flux in river at SW-004A	M r4A =	0.4798 (mg/s)
	mass flux in river at SW-005	M r5 =	0.7561 (mg/s)
	mass flux in river at USGS Gage	M r6 =	0.8133 (mg/s)
mass flux into Colby Lake	M cl =	0.9656 (mg/s)	
Low Flow			
Convert mass flux to concentration	concentration in river at SW-001	C r1 =	0.00430 (mg/L)
	concentration in river at SW-002	C r2 =	0.00430 (mg/L)
	concentration in river at SW-003	C r3 =	0.00468 (mg/L)
	concentration in river at SW-004	C r4 =	0.00492 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00514 (mg/L)
	concentration in river at SW-005	C r5 =	0.00480 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00476 (mg/L)
concentration in Colby Lake (H	C cl =	0.00142 (mg/L)	

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Closure Zinc		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0160 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0160 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0160 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0160 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0160 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0160 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0160 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0160 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0620 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0073 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0275 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0275 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0275 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0275 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0275 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0275 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0275 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0275 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.2586 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0900 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0900 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0900 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.0030 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0900 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0900 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0900 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0046 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0275 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0275 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0275 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.14009 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.20744 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.20062 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.07919 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.08159 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00005 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.23646 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.08159 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	1.07489 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.01577 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.00388 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	1.76663 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.36578 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.91055 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.68429 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	0.3475 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.5481 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.7090 (mg/s)
	mass flux in river at SW-004	M_r4 =	1.0270 (mg/s)
	mass flux in river at SW-004A	M_r4A =	2.1216 (mg/s)
	mass flux in river at SW-005	M_r5 =	3.8852 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	4.2540 (mg/s)
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C_r1 =	0.01041 (mg/L)
	concentration in river at SW-002	C_r2 =	0.01347 (mg/L)
	concentration in river at SW-003	C_r3 =	0.01616 (mg/L)
	concentration in river at SW-004	C_r4 =	0.01945 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.02273 (mg/L)
	concentration in river at SW-005	C_r5 =	0.02467 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.02489 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.01761 (mg/L)

## Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

### FLOWS

Case Flow	Closure Average Flow Conditions (mean annual)			
Total flow in Partridge River	flow in river at SW-001	Q_r1_M =	5.70	(cfs)
	flow in river at SW-002	Q_r2_M =	11.10	(cfs)
	flow in river at SW-003	Q_r3_M =	12.74	(cfs)
	flow in river at SW-004	Q_r4_M =	19.12	(cfs)
	flow in river at SW-004A	Q_r4a_M =	43.38	(cfs)
	flow in river at SW-005	Q_r5_M =	81.78	(cfs)
	flow in river at USGS Gage	Q_r6_M =	86.13	(cfs)
	total flow into Colby Lake	Q_cl_M =	111.25	(cfs)
	flow check	Q_ck_M =	111.25	(cfs)
input flow data	surface water flow into SW-001	Q_s1_M =	4.52	(cfs)
	surface water flow into SW-002	Q_s2_M =	5.14	(cfs)
	surface water flow into SW-003	Q_s3_M =	1.53	(cfs)
	surface water flow into SW-004	Q_s4_M =	6.06	(cfs)
	surface water flow into SW-004A	Q_s4a_M =	22.81	(cfs)
	surface water flow into SW-005	Q_s5_M =	36.13	(cfs)
	surface water flow into USGS Gage	Q_s6_M =	3.88	(cfs)
	surface water flow into Colby Lake	Q_scl_M =	23.56	(cfs)
	surface water inflow from Hoyt Lakes WWTP	Q_shl_M =	0.39	(cfs)
	surface water inflow from discharges upstream of PM-1	Q_sns_M =	1.00	(cfs)
	surface water flow from West Pit overflow	Q_sms_M =	-	(cfs)
	ground water flow into SW-001	Q_g1_M =	0.18	(cfs)
	ground water flow into SW-002	Q_g2_M =	0.26	(cfs)
	ground water flow into SW-003	Q_g3_M =	0.10	(cfs)
	ground water flow into SW-004	Q_g4_M =	0.30	(cfs)
	ground water flow into SW-004A	Q_g4a_M =	1.38	(cfs)
	ground water flow into SW-005	Q_g5_M =	2.27	(cfs)
	ground water flow into USGS Gage	Q_g6_M =	0.47	(cfs)
	ground water flow into Colby Lake	Q_gcl_M =	1.17	(cfs)
	ground water seepage from East Pit to SW-003	Q_gep_003_M =	0.0112	(cfs)
	ground water seepage from East Pit to SW-004	Q_gep_004_M =	0.0112	(cfs)
	ground water seepage from West Pit	Q_gwp_M =	-	(cfs)
	ground water liner leakage from Cat 1 stockpile	Q_gC12_M =	0.0085	(cfs)
	ground water liner leakage from Cat 2/3 stockpile to SW-003	Q_gC3_003_M =	0.0000	(cfs)
	ground water liner leakage from Cat 2/3 stockpile to SW-004	Q_gC3_004_M =	-	(cfs)
	ground water liner leakage from Cat 3LO stockpile to SW-003	Q_gC3LO_003_M =	0.0000	(cfs)
	ground water liner leakage from Cat 3LO stockpile to SW-004	Q_gC3LO_004_M =	0.0000	(cfs)
	ground water liner leakage from Cat 4 stockpile	Q_gC4_M =	-	(cfs)
	ground water liner leakage from LO SP	Q_gC4LO_M =	-	(cfs)
	ground water seepage from Overburden Storage	Q_gOS_M =	-	(cfs)
	ground water seepage from Overburden (Cat 1)	Q_gO12_M =	0.0628	(cfs)
	ground water liner leakage from Cat 1 sumps	Q_gC12s_M =	0.0000	(cfs)
	ground water liner leakage from Cat 2/3 sumps	Q_gC3s_M =	0.0000	(cfs)
	ground water liner leakage from Cat 3LO sumps	Q_gC3LOs_M =	0.0000	(cfs)
	ground water liner leakage from Cat 4 sumps	Q_gC4s_M =	-	(cfs)
	ground water liner leakage from LO SP sumps	Q_gC4LOs_M =	-	(cfs)
	ground water seepage from Overburden pond - PW1	Q_gOp1_M =	-	(cfs)
	ground water seepage from Overburden pond - PW7	Q_gOp7_M =	-	(cfs)
	ground water leakage from Haul Road pond - PW2	Q_gHRp2_M =	-	(cfs)
	ground water leakage from Haul Road pond - PW4	Q_gHRp4_M =	-	(cfs)
	ground water leakage from RTH pond - PW3	Q_gRTHp_M =	-	(cfs)
	ground water liner leakage from WWTF pond	Q_gWTFp_M =	-	(cfs)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Closure Silver		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0001 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0001 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0001 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0001 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0001 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0001 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0001 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0001 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0001 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0001 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0006 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0006 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0006 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0006 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0006 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0006 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0006 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0006 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.0003 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0007 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0007 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0007 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0007 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0007 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0007 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	- (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0006 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0006 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0006 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Average Flow			
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	0.01279 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00280 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.00340 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	0.01454 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.00401 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.00434 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00158 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.00010 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.01715 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.00473 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.00010 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	0.06455 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.02150 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.00017 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	0.10225 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.03533 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.01098 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.00732 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	0.06667 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.01821 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00110 (mg/s)
Average Flow			
Mass balance at each node	mass flux in river at SW-001	M_r1 =	0.0190 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.0375 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.0436 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.0655 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.1518 (mg/s)
	mass flux in river at SW-005	M_r5 =	0.2893 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	0.3076 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	0.3936 (mg/s)
	concentration in river at SW-001	C_r1 =	0.00012 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00012 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00012 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00012 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00012 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00013 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00013 (mg/L)
	concentration in Colby Lake	C_cl =	0.00013 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Closure Aluminum		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0700 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0700 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0700 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0700 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0700 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0700 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0700 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0700 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0700 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0173 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.1250 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.1250 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.1250 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.1250 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.1250 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.1250 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.1250 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.1250 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.1135 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	1.6800 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	1.6800 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	1.6800 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.1400 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	1.6800 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	1.6800 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	1.6800 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.4106 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.1250 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.1250 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.1250 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Average Flow			
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	8.95493 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.63675 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.48959 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	10.17866 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.91193 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	3.03704 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.35995 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.03581 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00192 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00030 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	12.00424 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	1.07480 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.03581 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00030 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	45.18717 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	4.88584 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.40448 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00004 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.24865 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	71.57718 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	8.03013 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	7.68642 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	1.66263 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	46.67236 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	4.13888 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.77259 (mg/s)
Average Flow			
Mass balance at each node	mass flux in river at SW-001	M_r1 =	10.0813 (mg/s)
	mass flux in river at SW-002	M_r2 =	21.1719 (mg/s)
	mass flux in river at SW-003	M_r3 =	24.6069 (mg/s)
	mass flux in river at SW-004	M_r4 =	37.7220 (mg/s)
	mass flux in river at SW-004A	M_r4A =	88.4482 (mg/s)
	mass flux in river at SW-005	M_r5 =	168.0555 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	177.4046 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	228.9884 (mg/s)
	concentration in river at SW-001	C_r1 =	0.06249 (mg/L)
	concentration in river at SW-002	C_r2 =	0.06742 (mg/L)
	concentration in river at SW-003	C_r3 =	0.06824 (mg/L)
	concentration in river at SW-004	C_r4 =	0.06972 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.07205 (mg/L)
	concentration in river at SW-005	C_r5 =	0.07261 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.07278 (mg/L)
	concentration in Colby Lake	C_cl =	0.07273 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Closure Arsenic		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0021 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0021 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0021 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0021 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0021 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0021 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0021 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0021 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0021 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0065 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0022 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0022 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0022 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0022 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0022 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0022 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0022 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0022 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.0157 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.2237 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.3258 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.4300 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.0027 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.2237 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.3258 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.4300 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0016 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0022 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0022 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0022 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Average Flow			
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	0.26993 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.01100 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.18395 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	0.30681 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.01576 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.09155 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00622 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.00497 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00037 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00008 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.36184 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.01857 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.00497 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00008 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	1.36207 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.08443 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.05385 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.00480 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	2.15754 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.13876 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.23169 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.02873 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	1.40684 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.07152 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.02329 (mg/s)
Average Flow			
Mass balance at each node	mass flux in river at SW-001	M_r1 =	0.4649 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.7875 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.8906 (mg/s)
	mass flux in river at SW-004	M_r4 =	1.2761 (mg/s)
	mass flux in river at SW-004A	M_r4A =	2.7812 (mg/s)
	mass flux in river at SW-005	M_r5 =	5.0775 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	5.3380 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	6.8396 (mg/s)
	concentration in river at SW-001	C_r1 =	0.00288 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00251 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00247 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00236 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00227 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00219 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00219 (mg/L)
	concentration in Colby Lake	C_cl =	0.00217 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Closure Boron		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0450 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0450 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0450 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0450 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0450 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0450 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0450 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0450 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0450 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0960 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0870 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0870 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0870 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0870 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0870 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0870 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0870 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0870 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.3888 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.7600 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.7600 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.7600 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.0370 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.7600 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.7600 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.7600 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0622 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0870 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0870 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0870 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	Average Flow		
	mass flux of surface water into SW-001	M_s1 =	5.75674 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.44318 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	2.71680 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	6.54343 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.63470 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	1.95238 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.25053 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.12270 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00087 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00014 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	7.71701 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.74806 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.12270 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00014 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	29.04890 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	3.40055 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.18298 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00002 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.06572 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	46.01390 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	5.58897 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	4.94127 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	1.15719 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	30.00366 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	2.88066 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.49667 (mg/s)
Mass balance at each node	Average Flow		
	mass flux in river at SW-001	M_r1 =	8.9167 (mg/s)
	mass flux in river at SW-002	M_r2 =	16.0948 (mg/s)
	mass flux in river at SW-003	M_r3 =	18.4215 (mg/s)
	mass flux in river at SW-004	M_r4 =	27.0094 (mg/s)
	mass flux in river at SW-004A	M_r4A =	59.7075 (mg/s)
	mass flux in river at SW-005	M_r5 =	111.3104 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	117.4088 (mg/s)
	mass flux into Colby Lake	M_cl =	150.7898 (mg/s)
	Average Flow		
	concentration in river at SW-001	C_r1 =	0.05527 (mg/L)
	concentration in river at SW-002	C_r2 =	0.05125 (mg/L)
	concentration in river at SW-003	C_r3 =	0.05108 (mg/L)
	concentration in river at SW-004	C_r4 =	0.04992 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.04864 (mg/L)
	concentration in river at SW-005	C_r5 =	0.04809 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.04817 (mg/L)
	concentration in Colby Lake	C_cl =	0.04789 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Closure Barium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0077 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0077 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0077 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0077 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0077 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0077 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0077 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0077 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0077 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0050 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0219 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0219 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0219 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0219 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0219 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0219 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0219 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0219 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.0427 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.1900 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.1900 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.1900 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.0140 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.1900 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.1900 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.1900 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0168 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0219 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0219 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0219 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	Average Flow		
	mass flux of surface water into SW-001	M_s1 =	0.98248 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.11166 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.14150 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	1.11674 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.15992 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.33321 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.06312 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.01346 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00022 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00003 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	1.31704 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.18848 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.01346 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00003 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	4.95768 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.85678 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.04574 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.02487 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	7.85304 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	1.40816 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.84331 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.29156 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	5.12062 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.72579 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.08476 (mg/s)
Mass balance at each node	Average Flow		
	mass flux in river at SW-001	M_r1 =	1.2356 (mg/s)
	mass flux in river at SW-002	M_r2 =	2.5123 (mg/s)
	mass flux in river at SW-003	M_r3 =	2.5223 (mg/s)
	mass flux in river at SW-004	M_r4 =	4.4413 (mg/s)
	mass flux in river at SW-004A	M_r4A =	10.3264 (mg/s)
	mass flux in river at SW-005	M_r5 =	19.5878 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	20.7225 (mg/s)
	mass flux into Colby Lake	M_cl =	26.6537 (mg/s)
	Average Flow		
	concentration in river at SW-001	C_r1 =	0.00766 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00800 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00810 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00821 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00841 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00846 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00850 (mg/L)
	concentration in Colby Lake	C_cl =	0.00847 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Closure Beryllium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0001 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0001 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0001 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0001 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0001 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0001 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0001 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0001 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0001 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0001 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0001 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0001 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0001 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0001 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0001 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0001 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0001 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0001 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.0003 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0002 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0002 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	- (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0001 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0001 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0001 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	0.01279 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00074 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.00283 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	0.01454 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.00106 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.00434 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00042 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.00010 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.01715 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.00125 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.00010 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	0.06455 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.00567 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.00005 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	0.10225 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.00931 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.01098 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.00193 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	0.06667 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.00480 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00110 (mg/s)
Mass balance at each node	Average Flow		
	mass flux in river at SW-001	M_r1 =	0.0164 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.0320 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.0368 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.0553 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.1256 (mg/s)
	mass flux in river at SW-005	M_r5 =	0.2371 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	0.2501 (mg/s)
	mass flux into Colby Lake	M_cl =	0.3226 (mg/s)
	Average Flow		
	concentration in river at SW-001	C_r1 =	0.00010 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00010 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00010 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00010 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00010 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00010 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00010 (mg/L)
	concentration in Colby Lake	C_cl =	0.00010 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Closure Calcium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	17.0000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	17.0000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	17.0000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	17.0000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	17.0000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	17.0000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	17.0000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	17.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	17.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	24.5000 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	14.7900 (mg/L)
	concentration of ground water into SW-002	C_g2 =	14.7900 (mg/L)
	concentration of ground water into SW-003	C_g3 =	14.7900 (mg/L)
	concentration of ground water into SW-004	C_g4 =	14.7900 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	14.7900 (mg/L)
	concentration of ground water into SW-005	C_g5 =	14.7900 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	14.7900 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	14.7900 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	175.0708 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	540.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	540.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	540.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	15.8000 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	540.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	540.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	540.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	9.3700 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	14.7900 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	14.7900 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	14.7900 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	Average Flow		
	mass flux of surface water into SW-001	M_s1 =	2,174.76906 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	75.34026 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	693.35000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	2,471.96076 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	107.89920 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	737.56752 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	42.58957 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	55.24272 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.61824 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.09800 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00044 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	2,915.31459 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	127.16988 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	55.24272 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.09800 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00042 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	10,974.02707 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	578.09279 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	130.01168 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.01183 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	28.06213 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	17,383.03040 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	950.12439 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	1,866.70084 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	196.72179 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	11,334.71600 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	489.71169 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	187.62900 (mg/s)
Mass balance at each node	Average Flow		
	mass flux in river at SW-001	M_r1 =	2,943.4593 (mg/s)
	mass flux in river at SW-002	M_r2 =	5,523.3193 (mg/s)
	mass flux in river at SW-003	M_r3 =	6,359.4358 (mg/s)
	mass flux in river at SW-004	M_r4 =	9,457.2614 (mg/s)
	mass flux in river at SW-004A	M_r4A =	21,167.4669 (mg/s)
	mass flux in river at SW-005	M_r5 =	39,500.6217 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	41,564.0443 (mg/s)
Convert mass flux to concentration	Average Flow		
	concentration in river at SW-001	C_r1 =	18.24591 (mg/L)
	concentration in river at SW-002	C_r2 =	17.58871 (mg/L)
	concentration in river at SW-003	C_r3 =	17.63525 (mg/L)
	concentration in river at SW-004	C_r4 =	17.48067 (mg/L)
	concentration in river at SW-004A	C_r4A =	17.24231 (mg/L)
	concentration in river at SW-005	C_r5 =	17.06718 (mg/L)
	concentration in river at USGS Gage	C_r6 =	17.05173 (mg/L)
	concentration in Colby Lake	C_cl =	17.01681 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Closure Cadmium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0001 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0001 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0001 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0001 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0001 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0001 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0001 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0001 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0001 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0001 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0001 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0001 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0001 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0001 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0001 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0001 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0001 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0001 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.0017 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0002 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0002 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0001 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0001 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0001 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0001 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	Average Flow		
	mass flux of surface water into SW-001	M_s1 =	0.01279 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00051 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.00283 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	0.01454 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.00073 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.00434 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00029 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.00053 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.01715 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.00086 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.00053 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	0.06455 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.00391 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.00004 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	0.10225 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.00642 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.01098 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.00133 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	0.06667 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.00331 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00110 (mg/s)
Mass balance at each node	Average Flow		
	mass flux in river at SW-001	M_r1 =	0.0161 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.0314 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.0366 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.0551 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.1236 (mg/s)
	mass flux in river at SW-005	M_r5 =	0.2323 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	0.2446 (mg/s)
	mass flux into Colby Lake	M_cl =	0.3157 (mg/s)
	Average Flow		
	concentration in river at SW-001	C_r1 =	0.00010 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00010 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00010 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00010 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00010 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00010 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00010 (mg/L)
	concentration in Colby Lake	C_cl =	0.00010 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Closure Chloride		
Input concentration data	concentration of surface water into SW-001	C_s1 =	8.0000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	8.0000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	8.0000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	8.0000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	8.0000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	8.0000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	8.0000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	8.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	8.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	1.6000 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	6.6000 (mg/L)
	concentration of ground water into SW-002	C_g2 =	6.6000 (mg/L)
	concentration of ground water into SW-003	C_g3 =	6.6000 (mg/L)
	concentration of ground water into SW-004	C_g4 =	6.6000 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	6.6000 (mg/L)
	concentration of ground water into SW-005	C_g5 =	6.6000 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	6.6000 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	6.6000 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	167.6941 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	- (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	- (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	- (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	2.3300 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	- (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	- (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	- (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	5.3500 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	6.6000 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	6.6000 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	6.6000 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	1,023.42074 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	33.62040 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	45.28000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	1,163.27565 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	48.14975 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	347.09060 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	19.00549 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	52.91502 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	- (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	- (mg/s)
	mass flux of surface water into SW-004	M_s4 =	1,371.91275 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	56.74924 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	52.91502 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	- (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	- (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	5,164.24803 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	257.97244 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	- (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	4.13828 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	8,180.24960 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	423.99060 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	878.44745 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	87.78660 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	5,333.98400 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	218.53260 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	88.29600 (mg/s)
Mass balance at each node	mass flux in river at SW-001	M_r1 =	1,102.3211 (mg/s)
	mass flux in river at SW-002	M_r2 =	2,313.7465 (mg/s)
	mass flux in river at SW-003	M_r3 =	2,732.7578 (mg/s)
	mass flux in river at SW-004	M_r4 =	4,214.3346 (mg/s)
	mass flux in river at SW-004A	M_r4A =	9,640.6934 (mg/s)
	mass flux in river at SW-005	M_r5 =	18,244.8336 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	19,211.1678 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	24,851.9802 (mg/s)
	concentration in river at SW-001	C_r1 =	6.83307 (mg/L)
	concentration in river at SW-002	C_r2 =	7.36800 (mg/L)
	concentration in river at SW-003	C_r3 =	7.57817 (mg/L)
	concentration in river at SW-004	C_r4 =	7.78972 (mg/L)
	concentration in river at SW-004A	C_r4A =	7.85298 (mg/L)
	concentration in river at SW-005	C_r5 =	7.88316 (mg/L)
	concentration in river at USGS Gage	C_r6 =	7.88142 (mg/L)
	concentration in Colby Lake	C_cl =	7.89347 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Closure Cobalt		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0005 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0005 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0005 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0005 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0005 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0005 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0005 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0005 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0005 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0005 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0017 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0017 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0017 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0017 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0017 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0017 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0017 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0017 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.0010 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0339 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0493 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0520 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.0013 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0339 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0493 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0520 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0011 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0017 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0017 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0017 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Average Flow			
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	0.06396 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00841 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.01415 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	0.07270 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.01204 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.02169 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00475 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.00030 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00006 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.08574 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.01419 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.00030 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	0.32277 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.06449 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.00816 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.00231 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	0.51127 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.10600 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.05490 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.02195 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	0.33337 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.05463 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00552 (mg/s)
Average Flow			
Mass balance at each node	mass flux in river at SW-001	M_r1 =	0.0865 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.1713 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.1981 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.2983 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.6960 (mg/s)
	mass flux in river at SW-005	M_r5 =	1.3133 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	1.3902 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	1.7837 (mg/s)
	concentration in river at SW-001	C_r1 =	0.00054 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00055 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00055 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00055 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00057 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00057 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00057 (mg/L)
	concentration in Colby Lake	C_cl =	0.00057 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Closure Copper		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0017 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0017 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0017 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0017 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0017 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0017 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0017 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0017 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0190 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0012 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0030 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0030 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0030 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0030 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0030 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0030 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0030 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0030 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.0115 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0920 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0920 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0920 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.0170 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0920 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0920 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0920 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0214 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0030 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0030 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0030 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	0.21748 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.01503 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.03509 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	0.24720 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.02152 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.07376 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00849 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.00362 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00011 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00002 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.29153 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.02537 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.00362 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00002 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	1.09740 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.11531 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.02215 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.03019 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	1.73830 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.18951 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.18667 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.03924 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	1.13347 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.09768 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.20970 (mg/s)
Mass balance at each node	Average Flow		
	mass flux in river at SW-001	M_r1 =	0.2676 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.5363 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.6223 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.9428 (mg/s)
	mass flux in river at SW-004A	M_r4A =	2.2079 (mg/s)
	mass flux in river at SW-005	M_r5 =	4.1357 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	4.3616 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	5.8025 (mg/s)
	Average Flow		
	concentration in river at SW-001	C_r1 =	0.00166 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00171 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00173 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00174 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00180 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00179 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00179 (mg/L)
	concentration in Colby Lake	C_cl =	0.00184 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Closure Fluoride		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0700 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0700 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0700 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0700 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0700 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0700 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0700 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0700 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0700 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.1400 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.2800 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.2800 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.2800 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.2800 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.2800 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.2800 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.2800 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.2800 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.6360 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0621 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0621 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0621 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.4200 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0621 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0621 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0621 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.2239 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.2800 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.2800 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.2800 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	8.95493 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	1.42632 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	3.96200 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	10.17866 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	2.04272 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	3.03704 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.80629 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.20069 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00007 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	12.00424 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	2.40754 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.20069 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	45.18717 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	10.94429 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.01495 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.74596 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	71.57718 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	17.98748 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	7.68642 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	3.72428 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	46.67236 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	9.27108 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.77259 (mg/s)
Mass balance at each node	mass flux in river at SW-001	M_r1 =	14.3433 (mg/s)
	mass flux in river at SW-002	M_r2 =	28.5646 (mg/s)
	mass flux in river at SW-003	M_r3 =	30.6087 (mg/s)
	mass flux in river at SW-004	M_r4 =	45.2212 (mg/s)
	mass flux in river at SW-004A	M_r4A =	102.1136 (mg/s)
	mass flux in river at SW-005	M_r5 =	191.6782 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	203.0889 (mg/s)
	mass flux into Colby Lake	M_cl =	259.8050 (mg/s)
Convert mass flux to concentration	concentration in river at SW-001	C_r1 =	0.08891 (mg/L)
	concentration in river at SW-002	C_r2 =	0.08459 (mg/L)
	concentration in river at SW-003	C_r3 =	0.08488 (mg/L)
	concentration in river at SW-004	C_r4 =	0.08359 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.08318 (mg/L)
	concentration in river at SW-005	C_r5 =	0.08282 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.08332 (mg/L)
	concentration in Colby Lake	C_cl =	0.08252 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Closure Iron		
Input concentration data	concentration of surface water into SW-001	C_s1 =	1.6000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	1.6000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	1.6000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	1.6000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	1.6000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	1.6000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	1.6000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	1.6000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	1.6000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0300 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	2.8440 (mg/L)
	concentration of ground water into SW-002	C_g2 =	2.8440 (mg/L)
	concentration of ground water into SW-003	C_g3 =	2.8440 (mg/L)
	concentration of ground water into SW-004	C_g4 =	2.8440 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	2.8440 (mg/L)
	concentration of ground water into SW-005	C_g5 =	2.8440 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	2.8440 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	2.8440 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.5424 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.8100 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.8100 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.8100 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.1500 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.8100 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.8100 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.8100 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.2255 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	2.8440 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	2.8440 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	2.8440 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	Average Flow		
	mass flux of surface water into SW-001	M_s1 =	204.68415 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	14.48734 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.84900 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	232.65513 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	20.74816 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	69.41812 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	8.18964 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.17114 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00093 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00015 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	274.38255 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	24.45376 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.17114 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00015 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	1,032.84961 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	111.16267 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.19502 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00002 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.26641 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	1,636.04992 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	182.70140 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	175.68949 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	37.82804 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	1,066.79680 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	94.16768 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	17.65920 (mg/s)
Mass balance at each node	Average Flow		
	mass flux in river at SW-001	M_r1 =	220.0205 (mg/s)
	mass flux in river at SW-002	M_r2 =	473.4238 (mg/s)
	mass flux in river at SW-003	M_r3 =	551.2037 (mg/s)
	mass flux in river at SW-004	M_r4 =	850.2113 (mg/s)
	mass flux in river at SW-004A	M_r4A =	1,994.6851 (mg/s)
	mass flux in river at SW-005	M_r5 =	3,813.4364 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	4,026.9539 (mg/s)
Convert mass flux to concentration	Average Flow		
	concentration in river at SW-001	C_r1 =	1.36386 (mg/L)
	concentration in river at SW-002	C_r2 =	1.50759 (mg/L)
	concentration in river at SW-003	C_r3 =	1.52853 (mg/L)
	concentration in river at SW-004	C_r4 =	1.57152 (mg/L)
	concentration in river at SW-004A	C_r4A =	1.62480 (mg/L)
	concentration in river at SW-005	C_r5 =	1.64769 (mg/L)
	concentration in river at USGS Gage	C_r6 =	1.65207 (mg/L)
	concentration in Colby Lake	C_cl =	1.65339 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Closure Hardness		
Input concentration data	concentration of surface water into SW-001	C_s1 =	110.0000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	110.0000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	110.0000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	110.0000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	110.0000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	110.0000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	110.0000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	110.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	110.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	110.0000 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	66.4200 (mg/L)
	concentration of ground water into SW-002	C_g2 =	66.4200 (mg/L)
	concentration of ground water into SW-003	C_g3 =	66.4200 (mg/L)
	concentration of ground water into SW-004	C_g4 =	66.4200 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	66.4200 (mg/L)
	concentration of ground water into SW-005	C_g5 =	66.4200 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	66.4200 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	66.4200 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	647.4300 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	1,729.3495 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	1,729.3495 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	1,729.3495 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	71.5000 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	1,729.3495 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	1,729.3495 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	1,729.3495 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	43.5200 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	66.4200 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	66.4200 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	66.4200 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	Average Flow		
	mass flux of surface water into SW-001	M_s1 =	14,072.03511 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	338.34348 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	3,113.00000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	15,995.04021 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	484.56154 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	4,772.49573 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	191.26430 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	204.29330 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	1.97991 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.31383 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00139 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	18,863.80026 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	571.10370 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	204.29330 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.31383 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00133 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	71,008.41042 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	2,596.14083 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	416.36226 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.03789 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	126.99004 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	112,478.43201 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	4,266.88722 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	12,078.65247 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	883.45242 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	73,342.28000 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	2,198.23262 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	1,214.07000 (mg/s)
Mass balance at each node	Average Flow		
	mass flux in river at SW-001	M_r1 =	17,523.3788 (mg/s)
	mass flux in river at SW-002	M_r2 =	34,002.9803 (mg/s)
	mass flux in river at SW-003	M_r3 =	39,173.3288 (mg/s)
	mass flux in river at SW-004	M_r4 =	58,812.3412 (mg/s)
	mass flux in river at SW-004A	M_r4A =	132,960.7827 (mg/s)
	mass flux in river at SW-005	M_r5 =	249,706.1019 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	262,668.2068 (mg/s)
Convert mass flux to concentration	Average Flow		
	concentration in river at SW-001	C_r1 =	108.62389 (mg/L)
	concentration in river at SW-002	C_r2 =	108.28062 (mg/L)
	concentration in river at SW-003	C_r3 =	108.63095 (mg/L)
	concentration in river at SW-004	C_r4 =	108.70885 (mg/L)
	concentration in river at SW-004A	C_r4A =	108.30538 (mg/L)
	concentration in river at SW-005	C_r5 =	107.89147 (mg/L)
	concentration in river at USGS Gage	C_r6 =	107.76016 (mg/L)
	concentration in Colby Lake	C_cl =	107.80758 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Closure Potassium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	1.3000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	1.3000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	1.3000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	1.3000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	1.3000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	1.3000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	1.3000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	1.3000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	1.3000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	2.7000 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	1.7500 (mg/L)
	concentration of ground water into SW-002	C_g2 =	1.7500 (mg/L)
	concentration of ground water into SW-003	C_g3 =	1.7500 (mg/L)
	concentration of ground water into SW-004	C_g4 =	1.7500 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	1.7500 (mg/L)
	concentration of ground water into SW-005	C_g5 =	1.7500 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	1.7500 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	1.7500 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	26.9309 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	49.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	49.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	49.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	4.4500 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	49.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	49.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	49.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	2.2600 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	1.7500 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	1.7500 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	1.7500 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Average Flow			
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	166.30587 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	8.91450 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	76.41000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	189.03229 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	12.76698 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	56.40222 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	5.03933 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	8.49792 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.05610 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00889 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00004 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	222.93582 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	15.04715 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	8.49792 (mg/s)
	mass flux of liner leakage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00889 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00004 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	839.19030 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	68.40178 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	11.79736 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00107 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	7.90358 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	1,329.29056 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	112.42175 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	142.74771 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	23.27675 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	866.77240 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	57.94425 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	14.34810 (mg/s)
Average Flow			
Mass balance at each node	mass flux in river at SW-001	M_r1 =	251.6304 (mg/s)
	mass flux in river at SW-002	M_r2 =	453.4296 (mg/s)
	mass flux in river at SW-003	M_r3 =	523.4341 (mg/s)
	mass flux in river at SW-004	M_r4 =	769.9240 (mg/s)
	mass flux in river at SW-004A	M_r4A =	1,697.2181 (mg/s)
	mass flux in river at SW-005	M_r5 =	3,138.5304 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	3,304.9548 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	4,244.0196 (mg/s)
	concentration in river at SW-001	C_r1 =	1.55981 (mg/L)
	concentration in river at SW-002	C_r2 =	1.44392 (mg/L)
	concentration in river at SW-003	C_r3 =	1.45153 (mg/L)
	concentration in river at SW-004	C_r4 =	1.42312 (mg/L)
	concentration in river at SW-004A	C_r4A =	1.38250 (mg/L)
	concentration in river at SW-005	C_r5 =	1.35625 (mg/L)
	concentration in river at USGS Gage	C_r6 =	1.35586 (mg/L)
	concentration in Colby Lake	C_cl =	1.34798 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Closure Magnesium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	8.0000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	8.0000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	8.0000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	8.0000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	8.0000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	8.0000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	8.0000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	8.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	8.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	10.5000 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	8.0200 (mg/L)
	concentration of ground water into SW-002	C_g2 =	8.0200 (mg/L)
	concentration of ground water into SW-003	C_g3 =	8.0200 (mg/L)
	concentration of ground water into SW-004	C_g4 =	8.0200 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	8.0200 (mg/L)
	concentration of ground water into SW-005	C_g5 =	8.0200 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	8.0200 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	8.0200 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	49.3084 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	93.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	93.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	93.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	9.0100 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	93.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	93.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	93.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	4.8800 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	8.0200 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	8.0200 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	8.0200 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	Average Flow		
	mass flux of surface water into SW-001	M_s1 =	1,023.42074 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	40.85388 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	297.15000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	1,163.27565 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	58.50924 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	347.09060 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	23.09455 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	15.55903 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.10647 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.01688 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00007 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	1,371.91275 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	68.95892 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	15.55903 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.01688 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00007 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	5,164.24803 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	313.47560 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	22.39090 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00204 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	16.00252 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	8,180.24960 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	515.21282 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	878.44745 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	106.67402 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	5,333.98400 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	265.55022 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	88.29600 (mg/s)
Mass balance at each node	Average Flow		
	mass flux in river at SW-001	M_r1 =	1,361.4248 (mg/s)
	mass flux in river at SW-002	M_r2 =	2,583.2095 (mg/s)
	mass flux in river at SW-003	M_r3 =	2,969.0771 (mg/s)
	mass flux in river at SW-004	M_r4 =	4,425.6248 (mg/s)
	mass flux in river at SW-004A	M_r4A =	9,941.6438 (mg/s)
	mass flux in river at SW-005	M_r5 =	18,637.1063 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	19,622.2277 (mg/s)
Convert mass flux to concentration	Average Flow		
	concentration in river at SW-001	C_r1 =	8.43920 (mg/L)
	concentration in river at SW-002	C_r2 =	8.22609 (mg/L)
	concentration in river at SW-003	C_r3 =	8.23350 (mg/L)
	concentration in river at SW-004	C_r4 =	8.18008 (mg/L)
	concentration in river at SW-004A	C_r4A =	8.09813 (mg/L)
	concentration in river at SW-005	C_r5 =	8.05261 (mg/L)
	concentration in river at USGS Gage	C_r6 =	8.05006 (mg/L)
	concentration in Colby Lake	C_cl =	8.03897 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case	Closure		
Parameter	Manganese		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.1500 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.1500 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.1500 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.1500 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.1500 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.1500 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.1500 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.1500 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.1500 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0086 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.1240 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.1240 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.1240 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.1240 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.1240 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.1240 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.1240 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.1240 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	0.0510 (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.5115 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.7450 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.7500 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.1160 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.5115 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.7450 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.7500 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.1604 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.1240 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.1240 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.1240 (mg/L)
	concentration of liner leakage from WWTF pond	C gWTFp =	#N/A (mg/L)
		Average Flow	
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	19.18914 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.63166 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.24338 (mg/s)
	mass flux of surface water into SW-002	M s2 =	21.81142 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.90463 (mg/s)
	mass flux of surface water into SW-003	M s3 =	6.50795 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.35707 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	0.01609 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.00085 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00014 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	25.72336 (mg/s)
	mass flux of ground water into SW-004	M g4 =	1.06620 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	0.01609 (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00014 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M s4A =	96.82965 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	4.84675 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	0.12315 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	0.20603 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	153.37968 (mg/s)
	mass flux of ground water into SW-005	M g5 =	7.96588 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	16.47089 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	1.64932 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	100.01220 (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	4.10576 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl =	1.65555 (mg/s)
		Average Flow	
Mass balance at each node	mass flux in river at SW-001	M r1 =	20.0642 (mg/s)
	mass flux in river at SW-002	M r2 =	42.7802 (mg/s)
	mass flux in river at SW-003	M r3 =	49.6623 (mg/s)
	mass flux in river at SW-004	M r4 =	76.4681 (mg/s)
	mass flux in river at SW-004A	M r4A =	178.4737 (mg/s)
	mass flux in river at SW-005	M r5 =	339.8193 (mg/s)
	mass flux in river at USGS Gage	M r6 =	357.9395 (mg/s)
	mass flux into Colby Lake	M cl =	463.7130 (mg/s)
		Average Flow	
Convert mass flux to concentration	concentration in river at SW-001	C r1 =	0.12437 (mg/L)
	concentration in river at SW-002	C r2 =	0.13623 (mg/L)
	concentration in river at SW-003	C r3 =	0.13772 (mg/L)
	concentration in river at SW-004	C r4 =	0.14134 (mg/L)
	concentration in river at SW-004A	C r4A =	0.14538 (mg/L)
	concentration in river at SW-005	C r5 =	0.14683 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.14685 (mg/L)
	concentration in Colby Lake	C cl =	0.14728 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Closure Sodium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	2.5000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	2.5000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	2.5000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	2.5000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	2.5000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	2.5000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	2.5000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	2.5000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	2.5000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	4.8000 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	13.3300 (mg/L)
	concentration of ground water into SW-002	C_g2 =	13.3300 (mg/L)
	concentration of ground water into SW-003	C_g3 =	13.3300 (mg/L)
	concentration of ground water into SW-004	C_g4 =	13.3300 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	13.3300 (mg/L)
	concentration of ground water into SW-005	C_g5 =	13.3300 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	13.3300 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	13.3300 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	1,213.8986 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	349.3890 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	508.8894 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	671.7238 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	7.1900 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	349.3890 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	508.8894 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	671.7238 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	4.6000 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	13.3300 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	13.3300 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	13.3300 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Average Flow			
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	319.81898 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	67.90302 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	135.84000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	363.52364 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	97.24790 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	108.46581 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	38.38532 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	383.03963 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.58262 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.12190 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00041 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	428.72273 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	114.61626 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	383.03963 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.12190 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00052 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	1,613.82751 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	521.02615 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	84.11972 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00766 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	12.77005 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	2,556.32800 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	856.33253 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	274.51483 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	177.30233 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	1,666.87000 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	441.36963 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	27.59250 (mg/s)
Average Flow			
Mass balance at each node	mass flux in river at SW-001	M_r1 =	523.5620 (mg/s)
	mass flux in river at SW-002	M_r2 =	984.3355 (mg/s)
	mass flux in river at SW-003	M_r3 =	1,514.9262 (mg/s)
	mass flux in river at SW-004	M_r4 =	2,441.4303 (mg/s)
	mass flux in river at SW-004A	M_r4A =	4,673.1814 (mg/s)
	mass flux in river at SW-005	M_r5 =	8,085.8419 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	8,537.6591 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	10,673.4912 (mg/s)
	concentration in river at SW-001	C_r1 =	3.24546 (mg/L)
	concentration in river at SW-002	C_r2 =	3.13456 (mg/L)
	concentration in river at SW-003	C_r3 =	4.20103 (mg/L)
	concentration in river at SW-004	C_r4 =	4.51271 (mg/L)
	concentration in river at SW-004A	C_r4A =	3.80662 (mg/L)
	concentration in river at SW-005	C_r5 =	3.49368 (mg/L)
	concentration in river at USGS Gage	C_r6 =	3.50259 (mg/L)
	concentration in Colby Lake	C_cl =	3.39011 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Closure Nickel		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0016 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0016 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0016 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0016 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0016 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0016 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0016 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0016 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0033 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0016 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0163 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0163 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0163 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0163 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0163 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0163 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0163 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0163 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.0083 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.2206 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.3213 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.4241 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.0190 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.2206 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.3213 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.4241 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0080 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0163 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0163 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0163 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	0.19957 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.08293 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.04387 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	0.22684 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.11877 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.06768 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.04688 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.00263 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00037 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00008 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.26752 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.13998 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.00263 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00008 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	1.00703 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.63633 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.05311 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.03375 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	1.59515 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	1.04584 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.17130 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.21654 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	1.04013 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.53905 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.03642 (mg/s)
Mass balance at each node	Average Flow		
	mass flux in river at SW-001	M_r1 =	0.3264 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.6720 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.7866 (mg/s)
	mass flux in river at SW-004	M_r4 =	1.1998 (mg/s)
	mass flux in river at SW-004A	M_r4A =	2.9300 (mg/s)
	mass flux in river at SW-005	M_r5 =	5.5710 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	5.9589 (mg/s)
	mass flux into Colby Lake	M_cl =	7.5745 (mg/s)
Convert mass flux to concentration	Average Flow		
	concentration in river at SW-001	C_r1 =	0.00202 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00214 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00219 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00222 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00239 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00241 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00244 (mg/L)
	concentration in Colby Lake	C_cl =	0.00241 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Closure Lead		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0005 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0005 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0005 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0005 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0005 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0005 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0005 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0005 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0005 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0002 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0011 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0011 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0011 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0011 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0011 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0011 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0011 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0011 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.0118 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0264 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0385 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0508 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0264 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0385 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0508 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0007 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0011 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0011 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0011 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Average Flow			
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	0.06396 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00571 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.00425 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	0.07270 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.00817 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.02169 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00323 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.00371 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00004 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.08574 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.00963 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.00371 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	0.32277 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.04378 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.00636 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	0.51127 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.07195 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.05490 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.01490 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	0.33337 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.03708 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00552 (mg/s)
Average Flow			
Mass balance at each node	mass flux in river at SW-001	M_r1 =	0.0739 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.1548 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.1835 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.2826 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.6555 (mg/s)
	mass flux in river at SW-005	M_r5 =	1.2387 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	1.3065 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	1.6845 (mg/s)
	concentration in river at SW-001	C_r1 =	0.00046 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00049 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00051 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00052 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00053 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00054 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00054 (mg/L)
	concentration in Colby Lake	C_cl =	0.00054 (mg/L)



Case	Closure
Parameter	Antimony

			Average Flow
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	0.19189 (mg/s)
	mass flux of ground water into SW-001	M q1 =	0.00764 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.04245 (mg/s)
	mass flux of surface water into SW-002	M s2 =	0.21811 (mg/s)
	mass flux of ground water into SW-002	M q2 =	0.01094 (mg/s)
	mass flux of surface water into SW-003	M s3 =	0.06508 (mg/s)
	mass flux of ground water into SW-003	M q3 =	0.00432 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep 003 =	0.00368 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M qC3 003 =	0.00009 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M qC3LO 003 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M qC3s 003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	0.25723 (mg/s)
	mass flux of ground water into SW-004	M q4 =	0.01290 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep 004 =	0.00368 (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M qC3 004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M qC3LO 004 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M qC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M qC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M qOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M qC3LOs 004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M qC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M qC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M qOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M qHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M qHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M qRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF Pond	M qWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M s4A =	0.96830 (mg/s)
	mass flux of ground water into SW-004A	M q4A =	0.05863 (mg/s)
mass flux of West Pit overflow	M sms =	#N/A (mg/s)	
mass flux of liner leakage from Cat 1 stockpile	M qC12 =	0.01926 (mg/s)	
mass flux of liner leakage from Cat 1 sumps	M qC12s =	0.00000 (mg/s)	
mass flux of seepage from Overburden (Cat 1)	M qO12 =	0.00071 (mg/s)	
mass flux of seepage from Overburden Pond - PW7	M qOp7 =	#N/A (mg/s)	
mass flux of surface water into SW-005	M s5 =	1.53380 (mg/s)	
mass flux of ground water into SW-005	M q5 =	0.09636 (mg/s)	
mass flux of surface water into USGS Gage	M s6 =	0.16471 (mg/s)	
mass flux of ground water into USGS Gage	M q6 =	0.01995 (mg/s)	
mass flux of surface water into Colby Lake	M scl =	1.00012 (mg/s)	
mass flux of ground water into Colby Lake	M qcl =	0.04967 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.01656 (mg/s)	

			Average Flow
Mass balance at each node	mass flux in river at SW-001	M r1 =	0.2420 (mg/s)
	mass flux in river at SW-002	M r2 =	0.4710 (mg/s)
	mass flux in river at SW-003	M r3 =	0.5442 (mg/s)
	mass flux in river at SW-004	M r4 =	0.8181 (mg/s)
	mass flux in river at SW-004A	M r4A =	1.8650 (mg/s)
	mass flux in river at SW-005	M r5 =	3.4951 (mg/s)
	mass flux in river at USGS Gage	M r6 =	3.6798 (mg/s)
	mass flux into Colby Lake	M cl =	4.7461 (mg/s)

			Average Flow
Convert mass flux to concentration	concentration in river at SW-001	C r1 =	0.00150 (mg/L)
	concentration in river at SW-002	C r2 =	0.00150 (mg/L)
	concentration in river at SW-003	C r3 =	0.00151 (mg/L)
	concentration in river at SW-004	C r4 =	0.00151 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00152 (mg/L)
	concentration in river at SW-005	C r5 =	0.00151 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00151 (mg/L)
	concentration in Colby Lake	C cl =	0.00151 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Closure Selenium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0005 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0005 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0005 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0005 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0005 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0005 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0005 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0005 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0005 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0005 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0019 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0019 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0019 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0019 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0019 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0019 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0019 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0019 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.0449 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0029 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0029 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0029 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.0019 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0029 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0029 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0029 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0004 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0019 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0019 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0019 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	Average Flow		
	mass flux of surface water into SW-001	M_s1 =	0.06396 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00973 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.01415 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	0.07270 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.01393 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.02169 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00550 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.01416 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.08574 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.01642 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.01416 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	0.32277 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.07466 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.00070 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.00337 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	0.51127 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.12270 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.05490 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.02540 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	0.33337 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.06324 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00552 (mg/s)
Mass balance at each node	Average Flow		
	mass flux in river at SW-001	M_r1 =	0.0878 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.1745 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.2158 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.3322 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.7337 (mg/s)
	mass flux in river at SW-005	M_r5 =	1.3676 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	1.4479 (mg/s)
Convert mass flux to concentration	Average Flow		
	concentration in river at SW-001	C_r1 =	0.00054 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00056 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00060 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00061 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00060 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00059 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00059 (mg/L)
	concentration in Colby Lake	C_cl =	0.00059 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Closure Sulfate		
Input concentration data	concentration of surface water into SW-001	C_s1 =	9.0000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	9.0000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	9.0000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	9.0000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	9.0000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	9.0000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	9.0000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	9.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	9.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	22.0000 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	16.1300 (mg/L)
	concentration of ground water into SW-002	C_g2 =	16.1300 (mg/L)
	concentration of ground water into SW-003	C_g3 =	16.1300 (mg/L)
	concentration of ground water into SW-004	C_g4 =	16.1300 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	16.1300 (mg/L)
	concentration of ground water into SW-005	C_g5 =	16.1300 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	16.1300 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	16.1300 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	344.8760 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	854.3331 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	1,244.3469 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	1,642.5130 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	68.3000 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	854.3331 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	1,244.3469 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	1,642.5130 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	35.1700 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	16.1300 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	16.1300 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	16.1300 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	1,151.34833 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	82.16622 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	622.60000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	1,308.68511 (mg/s)
	mass flux of surface water into SW-002	M_g2 =	117.67506 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	390.47692 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	46.44826 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	108.82389 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	1,42464 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.29807 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00100 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	1,543.40184 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	138.69170 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	108.82389 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.29807 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00127 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	5,809.77903 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	630.46901 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	205.69127 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.01872 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	121.30657 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	9,202.78080 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	1,036.20733 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	988.25338 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	214.54513 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	6,000.73200 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	534.08043 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	99.33300 (mg/s)
Mass balance at each node	mass flux in river at SW-001	M_r1 =	1,856.1145 (mg/s)
	mass flux in river at SW-002	M_r2 =	3,282.4747 (mg/s)
	mass flux in river at SW-003	M_r3 =	3,829.9475 (mg/s)
	mass flux in river at SW-004	M_r4 =	5,621.1643 (mg/s)
	mass flux in river at SW-004A	M_r4A =	12,368.4289 (mg/s)
	mass flux in river at SW-005	M_r5 =	22,627.4170 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	23,830.2155 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	30,464.3610 (mg/s)
	concentration in river at SW-001	C_r1 =	11.50568 (mg/L)
	concentration in river at SW-002	C_r2 =	10.45286 (mg/L)
	concentration in river at SW-003	C_r3 =	10.62077 (mg/L)
	concentration in river at SW-004	C_r4 =	10.39008 (mg/L)
	concentration in river at SW-004A	C_r4A =	10.09120 (mg/L)
	concentration in river at SW-005	C_r5 =	9.77671 (mg/L)
	concentration in river at USGS Gage	C_r6 =	9.77639 (mg/L)
	concentration in Colby Lake	C_cl =	9.67607 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Closure Thallium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0004 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0004 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0004 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0004 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0004 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0004 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0004 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0004 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0004 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0003 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0000 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0000 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0000 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0000 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0000 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0000 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0000 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0000 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.0001 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0000 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0000 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0000 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0000 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Average Flow			
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	0.05117 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00002 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.00809 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	0.05816 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.00003 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.01735 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00001 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.00005 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.06860 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.00003 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.00005 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	0.25821 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.00016 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	0.40901 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.00026 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.04392 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.00005 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	0.26670 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.00013 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00441 (mg/s)
Average Flow			
Mass balance at each node	mass flux in river at SW-001	M_r1 =	0.0593 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.1175 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.1349 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.2036 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.4619 (mg/s)
	mass flux in river at SW-005	M_r5 =	0.8712 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	0.9152 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	1.1864 (mg/s)
	concentration in river at SW-001	C_r1 =	0.00037 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00037 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00037 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00038 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00038 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00038 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00038 (mg/L)
	concentration in Colby Lake	C_cl =	0.00038 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Closure Vanadium		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0009 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0009 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0009 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0009 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0009 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0009 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0009 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0009 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0009 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0043 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0043 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0043 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0043 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0043 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0043 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0043 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0043 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0043 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	0.0574 (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.1317 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.1918 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.2532 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.0014 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.1317 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.1918 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.2532 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0017 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0043 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0043 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0043 (mg/L)
	concentration of liner leakage from WWTF pond	C gWTFp =	#N/A (mg/L)
Average Flow			
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	0.11513 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.02190 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.12169 (mg/s)
	mass flux of surface water into SW-002	M s2 =	0.13087 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.03137 (mg/s)
	mass flux of surface water into SW-003	M s3 =	0.03905 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.01238 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	0.01810 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.00022 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00005 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	0.15434 (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.03697 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	0.01810 (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00005 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M s4A =	0.58098 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.16807 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	0.03171 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	0.00249 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	0.92028 (mg/s)
	mass flux of ground water into SW-005	M g5 =	0.27624 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	0.09883 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.05719 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	0.60007 (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	0.14238 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.00993 (mg/s)
	Average Flow		
Mass balance at each node	mass flux in river at SW-001	M r1 =	0.2587 (mg/s)
	mass flux in river at SW-002	M r2 =	0.4210 (mg/s)
	mass flux in river at SW-003	M r3 =	0.4908 (mg/s)
	mass flux in river at SW-004	M r4 =	0.7002 (mg/s)
	mass flux in river at SW-004A	M r4A =	1.4835 (mg/s)
	mass flux in river at SW-005	M r5 =	2.6800 (mg/s)
	mass flux in river at USGS Gage	M r6 =	2.8360 (mg/s)
mass flux into Colby Lake	M cl =	3.5884 (mg/s)	
Average Flow			
Convert mass flux to concentration	concentration in river at SW-001	C r1 =	0.00160 (mg/L)
	concentration in river at SW-002	C r2 =	0.00134 (mg/L)
	concentration in river at SW-003	C r3 =	0.00136 (mg/L)
	concentration in river at SW-004	C r4 =	0.00129 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00121 (mg/L)
	concentration in river at SW-005	C r5 =	0.00116 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00116 (mg/L)
	concentration in Colby Lake	C cl =	0.00114 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Closure Zinc		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0160 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0160 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0160 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0160 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0160 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0160 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0160 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0160 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0620 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0073 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0275 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0275 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0275 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0275 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0275 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0275 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0275 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0275 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.2904 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0900 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0900 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0900 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.0030 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0900 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0900 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0900 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0046 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0275 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0275 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0275 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Average Flow			
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	2.04684 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.14009 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.20744 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	2.32655 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.20062 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.69418 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.07919 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.09165 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00010 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00002 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	2.74383 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.23646 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.09165 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00002 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	10.32850 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	1.07489 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.02167 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.00533 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	16.36050 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	1.76663 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	1.75689 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.36578 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	10.66797 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.91055 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.68429 (mg/s)
Average Flow			
Mass balance at each node	mass flux in river at SW-001	M_r1 =	2.3944 (mg/s)
	mass flux in river at SW-002	M_r2 =	4.9215 (mg/s)
	mass flux in river at SW-003	M_r3 =	5.7867 (mg/s)
	mass flux in river at SW-004	M_r4 =	8.5586 (mg/s)
	mass flux in river at SW-004A	M_r4A =	20.2890 (mg/s)
	mass flux in river at SW-005	M_r5 =	38.4161 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	40.5388 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	52.8016 (mg/s)
	concentration in river at SW-001	C_r1 =	0.01484 (mg/L)
	concentration in river at SW-002	C_r2 =	0.01567 (mg/L)
	concentration in river at SW-003	C_r3 =	0.01605 (mg/L)
	concentration in river at SW-004	C_r4 =	0.01637 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.01653 (mg/L)
	concentration in river at SW-005	C_r5 =	0.01660 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.01663 (mg/L)
	concentration in Colby Lake	C_cl =	0.01677 (mg/L)



## FLOWS

Case Flow	Closure High Flow Conditions (10-yr, 24-hr rainfall event)			
Total flow in Partridge River	flow in river at SW-001	Q_r1_H =	85.35	(cfs)
	flow in river at SW-002	Q_r2_H =	169.47	(cfs)
	flow in river at SW-003	Q_r3_H =	224.22	(cfs)
	flow in river at SW-004	Q_r4_H =	285.80	(cfs)
	flow in river at SW-004A	Q_r4a_H =	912.37	(cfs)
	flow in river at SW-005	Q_r5_H =	1,080.22	(cfs)
	flow in river at USGS Gage	Q_r6_H =	1,081.86	(cfs)
	total flow into Colby Lake	Q_cl_H =	1,419.39	(cfs)
	flow check	Q_ck_H =	1,419.39	(cfs)
Input flow data	surface water flow into SW-001	Q_s1_H =	84.17	(cfs)
	surface water flow into SW-002	Q_s2_H =	83.86	(cfs)
	surface water flow into SW-003	Q_s3_H =	54.63	(cfs)
	surface water flow into SW-004	Q_s4_H =	61.27	(cfs)
	surface water flow into SW-004A	Q_s4a_H =	625.00	(cfs)
	surface water flow into SW-005	Q_s5_H =	165.58	(cfs)
	surface water flow into USGS Gage	Q_s6_H =	1.17	(cfs)
	surface water flow into Colby Lake	Q_scl_H =	335.97	(cfs)
	surface water inflow from Hoyt Lakes WWTP	Q_shl_H =	0.39	(cfs)
	surface water inflow from discharges upstream of PM-1	Q_sns_H =	1.00	(cfs)
	surface water flow from West Pit overflow	Q_sms_H =	-	(cfs)
	ground water flow into SW-001	Q_g1_H =	0.18	(cfs)
	ground water flow into SW-002	Q_g2_H =	0.26	(cfs)
	ground water flow into SW-003	Q_g3_H =	0.10	(cfs)
	ground water flow into SW-004	Q_g4_H =	0.30	(cfs)
	ground water flow into SW-004A	Q_g4a_H =	1.38	(cfs)
	ground water flow into SW-005	Q_g5_H =	2.27	(cfs)
	ground water flow into USGS Gage	Q_g6_H =	0.47	(cfs)
	ground water flow into Colby Lake	Q_gcl_H =	1.17	(cfs)
	ground water seepage from East Pit to SW-003	Q_gep_003_H =	0.0112	(cfs)
	ground water seepage from East Pit to SW-004	Q_gep_004_H =	0.0112	(cfs)
	ground water seepage from West Pit	Q_gwp_H =	-	(cfs)
	ground water liner leakage from Cat 1 stockpile	Q_gC12_H =	0.0227	(cfs)
	ground water liner leakage from Cat 2/3 stockpile to SW-003	Q_gC3_003_H =	0.0002	(cfs)
	ground water liner leakage from Cat 2/3 stockpile to SW-004	Q_gC3_004_H =	-	(cfs)
	ground water liner leakage from Cat 3LO stockpile to SW-003	Q_gC3LO_003_H =	0.0002	(cfs)
	ground water liner leakage from Cat 3LO stockpile to SW-004	Q_gC3LO_004_H =	0.0002	(cfs)
	ground water liner leakage from Cat 4 stockpile	Q_gC4_H =	-	(cfs)
	ground water liner leakage from LO SP	Q_gC4LO_H =	-	(cfs)
	ground water seepage from Overburden Storage	Q_gOS_H =	-	(cfs)
	ground water seepage from Overburden (Cat 1)	Q_gO12_H =	0.1674	(cfs)
	ground water liner leakage from Cat 1 sumps	Q_gC12s_H =	0.0000	(cfs)
	ground water liner leakage from Cat 2/3 sumps	Q_gC3s_H =	0.0000	(cfs)
	ground water liner leakage from Cat 3LO sumps	Q_gC3LOs_H =	0.0000	(cfs)
	ground water liner leakage from Cat 4 sumps	Q_gC4s_H =	-	(cfs)
	ground water liner leakage from LO SP sumps	Q_gC4LOs_H =	-	(cfs)
	ground water seepage from Overburden pond - PW1	Q_gOp1_H =	-	(cfs)
	ground water seepage from Overburden pond - PW7	Q_gOp7_H =	-	(cfs)
	ground water leakage from Haul Road pond - PW2	Q_gHRp2_H =	-	(cfs)
	ground water leakage from Haul Road pond - PW4	Q_gHRp4_H =	-	(cfs)
	ground water leakage from RTH pond - PW3	Q_gRTHp_H =	-	(cfs)
	ground water liner leakage from WWTF pond	Q_gWTFp_H =	-	(cfs)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Closure Silver		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0001 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0001 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0001 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0001 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0001 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0001 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0001 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0001 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0001 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0001 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0006 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0006 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0006 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0006 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0006 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0006 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0006 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0006 (mg/L)
	concentration of ground water seepage from East Pit	C_gcp =	0.0002 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0007 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0007 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0007 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0007 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0007 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0007 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	- (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0006 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0006 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0006 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	0.23820 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00280 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.00340 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	0.23733 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.00401 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.15461 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00158 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gcp_003 =	0.00008 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.17339 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.00473 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gcp_004 =	0.00008 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	1.76875 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.02150 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.00045 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	0.46858 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.03533 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.00330 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.00732 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	0.95080 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.01821 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00110 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	0.2444 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.4857 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.6420 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.8202 (mg/s)
	mass flux in river at SW-004A	M_r4A =	2.6109 (mg/s)
	mass flux in river at SW-005	M_r5 =	3.1148 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	3.1254 (mg/s)
	mass flux into Colby Lake	M_cl =	4.0956 (mg/s)
	High Flow		
	concentration in river at SW-001	C_r1 =	0.00010 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00010 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00010 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00010 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00010 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00010 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00010 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.00011 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Closure Aluminum		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0700 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0700 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0700 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0700 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0700 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0700 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0700 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0700 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0700 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0173 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.1250 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.1250 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.1250 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.1250 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.1250 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.1250 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.1250 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.1250 (mg/L)
	concentration of ground water seepage from East Pit	C_gcp =	0.1043 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	1.6800 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	1.6800 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	1.6800 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.1400 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	1.6800 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	1.6800 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	1.6800 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.4106 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.1250 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.1250 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.1250 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	166.74077 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.63675 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.48959 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	166.12908 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.91193 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	108.23013 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.35995 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gcp_003 =	0.03292 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.01001 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00860 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	121.37374 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	1.07480 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gcp_004 =	0.03292 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00860 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	1,238.12483 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	4.88584 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	1.07866 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00004 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.66310 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	328.00904 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	8.03013 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	2.30986 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	1.66263 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	665.55657 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	4.13888 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.77259 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	167.8671 (mg/s)
	mass flux in river at SW-002	M_r2 =	334.9081 (mg/s)
	mass flux in river at SW-003	M_r3 =	443.5497 (mg/s)
	mass flux in river at SW-004	M_r4 =	566.0398 (mg/s)
	mass flux in river at SW-004A	M_r4A =	1,810.7923 (mg/s)
	mass flux in river at SW-005	M_r5 =	2,146.8314 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	2,150.8039 (mg/s)
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C_r1 =	0.06950 (mg/L)
	concentration in river at SW-002	C_r2 =	0.06983 (mg/L)
	concentration in river at SW-003	C_r3 =	0.06990 (mg/L)
	concentration in river at SW-004	C_r4 =	0.06998 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.07013 (mg/L)
	concentration in river at SW-005	C_r5 =	0.07023 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.07025 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.07158 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Closure Arsenic		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0021 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0021 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0021 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0021 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0021 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0021 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0021 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0021 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0021 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0065 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0022 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0022 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0022 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0022 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0022 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0022 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0022 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0022 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.0123 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.1552 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.2260 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.2984 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.0027 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.1552 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.2260 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.2984 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0016 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0022 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0022 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0022 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	5.02604 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.01100 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.18395 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	5.00761 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.01576 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	3.26237 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00622 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.00387 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00135 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00153 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	3.65855 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.01857 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.00387 (mg/s)
	mass flux of liner leakage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00153 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	37.32062 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.08443 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.09964 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.01279 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	9.88713 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.13876 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.06963 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.02873 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	20.06178 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.07152 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.02329 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	5.2210 (mg/s)
	mass flux in river at SW-002	M_r2 =	10.2444 (mg/s)
	mass flux in river at SW-003	M_r3 =	13.5197 (mg/s)
	mass flux in river at SW-004	M_r4 =	17.2022 (mg/s)
	mass flux in river at SW-004A	M_r4A =	54.7187 (mg/s)
	mass flux in river at SW-005	M_r5 =	64.7456 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	64.8439 (mg/s)
	mass flux into Colby Lake	M_cl =	85.0005 (mg/s)
	High Flow		
	concentration in river at SW-001	C_r1 =	0.00216 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00214 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00213 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00213 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00212 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00212 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00212 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.00215 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Closure Boron		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0450 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0450 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0450 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0450 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0450 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0450 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0450 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0450 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0450 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0960 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0870 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0870 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0870 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0870 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0870 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0870 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0870 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0870 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	0.3198 (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.5810 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.7600 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.7600 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.0370 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.5810 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.7600 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.7600 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0622 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0870 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0870 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0870 (mg/L)
	concentration of liner leakage from WWTF pond	C gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M s1 =	107.19050 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.44318 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	2.71680 (mg/s)
	mass flux of surface water into SW-002	M s2 =	106.79727 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.63470 (mg/s)
	mass flux of surface water into SW-003	M s3 =	69.57651 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.25053 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	0.10090 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.00453 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00389 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	78.02598 (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.74806 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	0.10090 (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00389 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M s4A =	795.93739 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	3.40055 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	0.37305 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	0.17525 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	210.86295 (mg/s)
	mass flux of ground water into SW-005	M g5 =	5.58897 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	1.48491 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	1.15719 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	427.85780 (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	2.88066 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.49667 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M r1 =	110.3505 (mg/s)
	mass flux in river at SW-002	M r2 =	217.7824 (mg/s)
	mass flux in river at SW-003	M r3 =	287.7188 (mg/s)
	mass flux in river at SW-004	M r4 =	366.5976 (mg/s)
	mass flux in river at SW-004A	M r4A =	1,166.4839 (mg/s)
	mass flux in river at SW-005	M r5 =	1,382.9358 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M r6 =	1,385.5779 (mg/s)
	mass flux into Colby Lake	M cl =	1,816.8130 (mg/s)
	High Flow		
	concentration in river at SW-001	C r1 =	0.04569 (mg/L)
	concentration in river at SW-002	C r2 =	0.04541 (mg/L)
	concentration in river at SW-003	C r3 =	0.04534 (mg/L)
	concentration in river at SW-004	C r4 =	0.04533 (mg/L)
	concentration in river at SW-004A	C r4A =	0.04518 (mg/L)
	concentration in river at SW-005	C r5 =	0.04524 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.04526 (mg/L)
	concentration in Colby Lake (H)	C cl =	0.04658 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Closure Barium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0077 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0077 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0077 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0077 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0077 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0077 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0077 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0077 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0077 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0050 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0219 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0219 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0219 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0219 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0219 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0219 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0219 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0219 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.0334 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.1900 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.1900 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.1900 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.0140 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.1900 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.1900 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.1900 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0168 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0219 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0219 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0219 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	18.29384 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.11166 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.14150 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	18.22673 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.15992 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	11.87439 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.06312 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.01053 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00113 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00097 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	13.31643 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.18848 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.01053 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00097 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	135.83998 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.85678 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.12199 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.06631 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	35.98728 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	1.40816 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.25342 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.29156 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	73.02106 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.72579 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.08476 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	18.5470 (mg/s)
	mass flux in river at SW-002	M_r2 =	36.9337 (mg/s)
	mass flux in river at SW-003	M_r3 =	48.8838 (mg/s)
	mass flux in river at SW-004	M_r4 =	62.4002 (mg/s)
	mass flux in river at SW-004A	M_r4A =	199.2853 (mg/s)
	mass flux in river at SW-005	M_r5 =	236.6807 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	237.2257 (mg/s)
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C_r1 =	0.00768 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00770 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00770 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00772 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00772 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00774 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00775 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.00811 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Closure Beryllium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0001 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0001 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0001 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0001 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0001 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0001 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0001 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0001 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0001 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0001 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0001 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0001 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0001 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0001 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0001 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0001 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0001 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0001 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.0003 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0002 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0002 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	- (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0001 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0001 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0001 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	0.23820 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00074 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.00283 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	0.23733 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.00106 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.15461 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00042 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.00008 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.17339 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.00125 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.00008 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	1.76875 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.00567 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.00013 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	0.46858 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.00931 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.00330 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.00193 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	0.95080 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.00480 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00110 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	0.2418 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.4802 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.6353 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.8100 (mg/s)
	mass flux in river at SW-004A	M_r4A =	2.5845 (mg/s)
	mass flux in river at SW-005	M_r5 =	3.0624 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	3.0677 (mg/s)
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C_r1 =	0.00010 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00010 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00010 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00010 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00010 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00010 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00010 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.00010 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Closure Calcium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	17.0000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	17.0000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	17.0000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	17.0000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	17.0000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	17.0000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	17.0000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	17.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	17.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	24.5000 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	14.7900 (mg/L)
	concentration of ground water into SW-002	C_g2 =	14.7900 (mg/L)
	concentration of ground water into SW-003	C_g3 =	14.7900 (mg/L)
	concentration of ground water into SW-004	C_g4 =	14.7900 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	14.7900 (mg/L)
	concentration of ground water into SW-005	C_g5 =	14.7900 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	14.7900 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	14.7900 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	155.0701 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	540.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	540.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	540.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	15.8000 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	540.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	540.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	540.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	9.3700 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	14.7900 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	14.7900 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	14.7900 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	40,494.18700 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	75.34026 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	693.35000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	40,345.63365 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	107.89920 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	26,284.45915 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	42.58957 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	48.93160 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	3.21789 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	2.76568 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00044 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	29,476.48042 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	127.16988 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	48.93160 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	2.76568 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00042 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	300,687.45844 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	578.09279 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	346.71361 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.01183 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	74.83577 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	79,659.33735 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	950.12439 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	560.96522 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	196.72179 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	161,635.16700 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	489.71169 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	187.62900 (mg/s)
Mass balance at each node			High Flow
	mass flux in river at SW-001	M_r1 =	41,262.8773 (mg/s)
	mass flux in river at SW-002	M_r2 =	81,716.4101 (mg/s)
	mass flux in river at SW-003	M_r3 =	108,098.3744 (mg/s)
	mass flux in river at SW-004	M_r4 =	137,753.7229 (mg/s)
	mass flux in river at SW-004A	M_r4A =	439,440.8353 (mg/s)
	mass flux in river at SW-005	M_r5 =	520,050.2970 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	520,807.9841 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	663,120.4917 (mg/s)
			High Flow
	concentration in river at SW-001	C_r1 =	17.08321 (mg/L)
	concentration in river at SW-002	C_r2 =	17.03855 (mg/L)
	concentration in river at SW-003	C_r3 =	17.03591 (mg/L)
	concentration in river at SW-004	C_r4 =	17.03154 (mg/L)
	concentration in river at SW-004A	C_r4A =	17.01932 (mg/L)
	concentration in river at SW-005	C_r5 =	17.01167 (mg/L)
	concentration in river at USGS Gage	C_r6 =	17.01070 (mg/L)
	concentration in Colby Lake (H)	C_cl =	17.04391 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Closure Cadmium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0001 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0001 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0001 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0001 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0001 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0001 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0001 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0001 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0001 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0001 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0001 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0001 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0001 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0001 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0001 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0001 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0001 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0001 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.0014 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0002 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0002 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0001 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0001 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0001 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0001 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M_s1 =	0.23820 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00051 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.00283 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	0.23733 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.00073 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.15461 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00029 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.00044 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.17339 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.00086 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.00044 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	1.76875 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.00391 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.00012 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	0.46858 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.00642 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.00330 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.00133 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	0.95080 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.00331 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00110 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	0.2415 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.4796 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.6349 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.8096 (mg/s)
	mass flux in river at SW-004A	M_r4A =	2.5824 (mg/s)
	mass flux in river at SW-005	M_r5 =	3.0574 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	3.0620 (mg/s)
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C_r1 =	0.00010 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00010 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00010 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00010 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00010 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00010 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00010 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.00010 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Closure Chloride		
Input concentration data	concentration of surface water into SW-001	C_s1 =	8.0000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	8.0000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	8.0000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	8.0000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	8.0000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	8.0000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	8.0000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	8.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	8.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	1.6000 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	6.6000 (mg/L)
	concentration of ground water into SW-002	C_g2 =	6.6000 (mg/L)
	concentration of ground water into SW-003	C_g3 =	6.6000 (mg/L)
	concentration of ground water into SW-004	C_g4 =	6.6000 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	6.6000 (mg/L)
	concentration of ground water into SW-005	C_g5 =	6.6000 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	6.6000 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	6.6000 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	147.5986 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	- (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	- (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	- (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	2.3300 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	- (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	- (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	- (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	5.3500 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	6.6000 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	6.6000 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	6.6000 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	19,056.08800 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	33.62040 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	45.28000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	18,986.18054 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	48.14975 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	12,369.15725 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	19,00549 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	46.57401 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	- (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	- (mg/s)
	mass flux of surface water into SW-004	M_s4 =	13,871.28491 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	56.74924 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	46.57401 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	- (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	- (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	141,499.98044 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	257.97244 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	- (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	11.03591 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	37,486.74699 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	423.99060 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	263.98363 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	87.78660 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	76,063.60800 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	218.53260 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	88.29600 (mg/s)
Mass balance at each node	mass flux in river at SW-001	M_r1 =	19,134.9884 (mg/s)
	mass flux in river at SW-002	M_r2 =	38,169.3187 (mg/s)
	mass flux in river at SW-003	M_r3 =	50,604.0564 (mg/s)
	mass flux in river at SW-004	M_r4 =	64,578.6636 (mg/s)
	mass flux in river at SW-004A	M_r4A =	206,347.6524 (mg/s)
	mass flux in river at SW-005	M_r5 =	244,258.3900 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	244,610.1602 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	320,960.5968 (mg/s)
	concentration in river at SW-001	C_r1 =	7.92206 (mg/L)
	concentration in river at SW-002	C_r2 =	7.95862 (mg/L)
	concentration in river at SW-003	C_r3 =	7.97502 (mg/L)
	concentration in river at SW-004	C_r4 =	7.98435 (mg/L)
	concentration in river at SW-004A	C_r4A =	7.99174 (mg/L)
	concentration in river at SW-005	C_r5 =	7.99008 (mg/L)
	concentration in river at USGS Gage	C_r6 =	7.98949 (mg/L)
	concentration in Colby Lake (H)	C_cl =	7.93990 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Closure Cobalt		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0005 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0005 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0005 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0005 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0005 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0005 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0005 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0005 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0005 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0005 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0017 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0017 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0017 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0017 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0017 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0017 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0017 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0017 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.0008 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0235 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0342 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0452 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.0013 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0235 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0342 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0452 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0011 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0017 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0017 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0017 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M_s1 =	1.19101 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00841 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.01415 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	1.18664 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.01204 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.77307 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00475 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.00025 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00020 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00023 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.86696 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.01419 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.00025 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00023 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	8.84375 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.06449 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.01509 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.00616 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	2.34292 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.10600 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.01650 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.02195 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	4.75398 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.05463 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00552 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	1.2136 (mg/s)
	mass flux in river at SW-002	M_r2 =	2.4122 (mg/s)
	mass flux in river at SW-003	M_r3 =	3.1907 (mg/s)
	mass flux in river at SW-004	M_r4 =	4.0724 (mg/s)
	mass flux in river at SW-004A	M_r4A =	13.0019 (mg/s)
	mass flux in river at SW-005	M_r5 =	15.4508 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	15.4892 (mg/s)
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C_r1 =	0.00050 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00050 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00050 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00050 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00050 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00051 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00051 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.00054 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Closure Copper		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0017 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0017 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0017 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0017 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0017 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0017 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0017 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0017 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0190 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0012 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0030 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0030 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0030 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0030 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0030 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0030 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0030 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0030 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.0097 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0920 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0920 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0920 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.0170 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0920 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0920 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0920 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0214 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0030 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0030 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0030 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	4.04942 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.01503 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.03509 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	4.03456 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.02152 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	2.62845 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00849 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.00306 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00055 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00047 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	2.94765 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.02537 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.00306 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00047 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	30.06875 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.11531 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.05907 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.08052 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	7.96593 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.18951 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.05610 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.03924 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	16.16352 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.09768 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.20970 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	4.0995 (mg/s)
	mass flux in river at SW-002	M_r2 =	8.1556 (mg/s)
	mass flux in river at SW-003	M_r3 =	10.7966 (mg/s)
	mass flux in river at SW-004	M_r4 =	13.7732 (mg/s)
	mass flux in river at SW-004A	M_r4A =	44.0968 (mg/s)
	mass flux in river at SW-005	M_r5 =	52.2523 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	52.3476 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	68.8185 (mg/s)
	High Flow		
	concentration in river at SW-001	C_r1 =	0.00170 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00170 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00170 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00170 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00171 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00171 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00171 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.00178 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Closure Fluoride		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0700 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0700 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0700 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0700 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0700 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0700 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0700 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0700 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0700 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.1400 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.2800 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.2800 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.2800 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.2800 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.2800 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.2800 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.2800 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.2800 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.5642 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0621 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0621 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0621 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.4200 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0621 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0621 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0621 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.2239 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.2800 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.2800 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.2800 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	166.74077 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	1.42632 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	3.96200 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	166.12908 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	2.04272 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	108.23013 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.80629 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.17802 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00037 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00032 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	121.37374 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	2.40754 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.17802 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00032 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	1,238.12483 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	10.94429 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.03986 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	1.98931 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	328.00904 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	17.98748 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	2.30986 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	3.72428 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	665.55657 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	9.27108 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.77259 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	172.1291 (mg/s)
	mass flux in river at SW-002	M_r2 =	340.3009 (mg/s)
	mass flux in river at SW-003	M_r3 =	449.5160 (mg/s)
	mass flux in river at SW-004	M_r4 =	573.4756 (mg/s)
	mass flux in river at SW-004A	M_r4A =	1,824.5704 (mg/s)
	mass flux in river at SW-005	M_r5 =	2,170.5704 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	2,176.6048 (mg/s)
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C_r1 =	0.07126 (mg/L)
	concentration in river at SW-002	C_r2 =	0.07096 (mg/L)
	concentration in river at SW-003	C_r3 =	0.07084 (mg/L)
	concentration in river at SW-004	C_r4 =	0.07090 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.07066 (mg/L)
	concentration in river at SW-005	C_r5 =	0.07100 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.07109 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.07672 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Closure Iron		
Input concentration data	concentration of surface water into SW-001	C_s1 =	1.6000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	1.6000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	1.6000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	1.6000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	1.6000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	1.6000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	1.6000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	1.6000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	1.6000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0300 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	2.8440 (mg/L)
	concentration of ground water into SW-002	C_g2 =	2.8440 (mg/L)
	concentration of ground water into SW-003	C_g3 =	2.8440 (mg/L)
	concentration of ground water into SW-004	C_g4 =	2.8440 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	2.8440 (mg/L)
	concentration of ground water into SW-005	C_g5 =	2.8440 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	2.8440 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	2.8440 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.8512 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.8100 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.8100 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.8100 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.1500 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.8100 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.8100 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.8100 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.2255 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	2.8440 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	2.8440 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	2.8440 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	3,811.21760 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	14.48734 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.84900 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	3,797.23611 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	20.74816 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	2,473.83145 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	8.18964 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.26859 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00483 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00415 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	2,774.25698 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	24.45376 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.26859 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00415 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	28,299.99609 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	111.16267 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.52007 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00002 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.71047 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	7,497.34940 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	182.70140 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	52.79673 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	37.82804 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	15,212.72160 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	94.16768 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	17,65920 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	3,826.5539 (mg/s)
	mass flux in river at SW-002	M_r2 =	7,644.5382 (mg/s)
	mass flux in river at SW-003	M_r3 =	10,128.8369 (mg/s)
	mass flux in river at SW-004	M_r4 =	12,925.8203 (mg/s)
	mass flux in river at SW-004A	M_r4A =	41,338.2097 (mg/s)
	mass flux in river at SW-005	M_r5 =	49,018.2605 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	49,108.8852 (mg/s)
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C_r1 =	1.58423 (mg/L)
	concentration in river at SW-002	C_r2 =	1.59395 (mg/L)
	concentration in river at SW-003	C_r3 =	1.59595 (mg/L)
	concentration in river at SW-004	C_r4 =	1.59812 (mg/L)
	concentration in river at SW-004A	C_r4A =	1.60101 (mg/L)
	concentration in river at SW-005	C_r5 =	1.60347 (mg/L)
	concentration in river at USGS Gage	C_r6 =	1.60400 (mg/L)
	concentration in Colby Lake (H)	C_cl =	1.62857 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Closure Hardness		
Input concentration data	concentration of surface water into SW-001	C_s1 =	110.0000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	110.0000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	110.0000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	110.0000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	110.0000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	110.0000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	110.0000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	110.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	110.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	110.0000 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	66.4200 (mg/L)
	concentration of ground water into SW-002	C_g2 =	66.4200 (mg/L)
	concentration of ground water into SW-003	C_g3 =	66.4200 (mg/L)
	concentration of ground water into SW-004	C_g4 =	66.4200 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	66.4200 (mg/L)
	concentration of ground water into SW-005	C_g5 =	66.4200 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	66.4200 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	66.4200 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	578.7993 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	1,729.3495 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	1,729.3495 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	1,729.3495 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	71.5000 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	1,729.3495 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	1,729.3495 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	1,729.3495 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	43.5200 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	66.4200 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	66.4200 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	66.4200 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M_s1 =	262,021.21000 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	338.34348 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	3,113.00000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	261,059.98247 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	484.56154 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	170,075.91215 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	191.26430 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	182.63722 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	10.30529 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	8.85707 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00139 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	190,730.16745 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	571.10370 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	182.63722 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	8.85707 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00133 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	##### (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	2,596.14083 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	1,110.34999 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.03789 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	338.65554 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	515,442.77112 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	4,266.88722 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	3,629.77493 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	883.45242 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	##### (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	2,199.23262 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	1,214.07000 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	265,472.5535 (mg/s)
	mass flux in river at SW-002	M_r2 =	527,017.0975 (mg/s)
	mass flux in river at SW-003	M_r3 =	697,486.0749 (mg/s)
	mass flux in river at SW-004	M_r4 =	888,978.8431 (mg/s)
	mass flux in river at SW-004A	M_r4A =	2,838,648.7584 (mg/s)
	mass flux in river at SW-005	M_r5 =	3,358,358.4167 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	3,362,871.6441 (mg/s)
	mass flux into Colby Lake	M_cl =	4,412,159.5567 (mg/s)
	High Flow		
	concentration in river at SW-001	C_r1 =	109.90809 (mg/L)
	concentration in river at SW-002	C_r2 =	109.88742 (mg/L)
	concentration in river at SW-003	C_r3 =	109.92127 (mg/L)
	concentration in river at SW-004	C_r4 =	109.91122 (mg/L)
	concentration in river at SW-004A	C_r4A =	109.93943 (mg/L)
	concentration in river at SW-005	C_r5 =	109.85726 (mg/L)
	concentration in river at USGS Gage	C_r6 =	109.83854 (mg/L)
	concentration in Colby Lake (H)	C_cl =	108.92954 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Closure Potassium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	1.3000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	1.3000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	1.3000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	1.3000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	1.3000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	1.3000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	1.3000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	1.3000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	1.3000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	2.7000 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	1.7500 (mg/L)
	concentration of ground water into SW-002	C_g2 =	1.7500 (mg/L)
	concentration of ground water into SW-003	C_g3 =	1.7500 (mg/L)
	concentration of ground water into SW-004	C_g4 =	1.7500 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	1.7500 (mg/L)
	concentration of ground water into SW-005	C_g5 =	1.7500 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	1.7500 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	1.7500 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	21.2194 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	49.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	49.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	49.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	4.4500 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	49.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	49.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	49.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	2.2600 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	1.7500 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	1.7500 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	1.7500 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	3,096.61430 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	8.91450 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	76.41000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	3,085.25434 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	12.76698 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	2,009.98805 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	5.03933 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	6.69569 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.29199 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.25096 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00004 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	2,254.08380 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	15.04715 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	6.69569 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.25096 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00004 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	22,993.74682 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	68.40178 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	31.46105 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00107 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	21.07716 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	6,091.59639 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	112.42175 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	42.89734 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	23.27675 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	12,360.33630 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	57.94425 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	14.34810 (mg/s)
Mass balance at each node	mass flux in river at SW-001	M_r1 =	3,181.9388 (mg/s)
	mass flux in river at SW-002	M_r2 =	6,279.9601 (mg/s)
	mass flux in river at SW-003	M_r3 =	8,302.2262 (mg/s)
	mass flux in river at SW-004	M_r4 =	10,578.3038 (mg/s)
	mass flux in river at SW-004A	M_r4A =	33,692.9917 (mg/s)
	mass flux in river at SW-005	M_r5 =	39,897.0059 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	39,963.1840 (mg/s)
	mass flux into Colby Lake	M_cl =	52,395.8126 (mg/s)
Convert mass flux to concentration	concentration in river at SW-001	C_r1 =	1.31735 (mg/L)
	concentration in river at SW-002	C_r2 =	1.30942 (mg/L)
	concentration in river at SW-003	C_r3 =	1.30840 (mg/L)
	concentration in river at SW-004	C_r4 =	1.30788 (mg/L)
	concentration in river at SW-004A	C_r4A =	1.30491 (mg/L)
	concentration in river at SW-005	C_r5 =	1.30509 (mg/L)
	concentration in river at USGS Gage	C_r6 =	1.30528 (mg/L)
	concentration in Colby Lake (H)	C_cl =	1.32863 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Closure Magnesium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	8.0000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	8.0000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	8.0000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	8.0000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	8.0000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	8.0000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	8.0000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	8.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	8.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	10.5000 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	8.0200 (mg/L)
	concentration of ground water into SW-002	C_g2 =	8.0200 (mg/L)
	concentration of ground water into SW-003	C_g3 =	8.0200 (mg/L)
	concentration of ground water into SW-004	C_g4 =	8.0200 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	8.0200 (mg/L)
	concentration of ground water into SW-005	C_g5 =	8.0200 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	8.0200 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	8.0200 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	44.0388 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	93.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	93.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	93.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	9.0100 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	93.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	93.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	93.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	4.8800 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	8.0200 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	8.0200 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	8.0200 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	19,056.08800 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	40.85388 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	297.15000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	18,986.18054 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	58.50924 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	12,369.15725 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	23.09455 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	13.89621 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.55419 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.47631 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00007 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	13,871.28491 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	68.95892 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	13.89621 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.47631 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00007 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	141,499.98044 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	313.47560 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	59.71179 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00204 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	42.67533 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	37,486.74699 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	515.21282 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	263.98363 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	106.67402 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	76,063.60800 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	265.55022 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	88.29600 (mg/s)
Mass balance at each node	mass flux in river at SW-001	M_r1 =	19,394.0919 (mg/s)
	mass flux in river at SW-002	M_r2 =	38,438.7817 (mg/s)
	mass flux in river at SW-003	M_r3 =	50,845.9602 (mg/s)
	mass flux in river at SW-004	M_r4 =	64,800.5767 (mg/s)
	mass flux in river at SW-004A	M_r4A =	206,718.3819 (mg/s)
	mass flux in river at SW-005	M_r5 =	244,718.3818 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	245,089.0394 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	321,506.4936 (mg/s)
	concentration in river at SW-001	C_r1 =	8.02933 (mg/L)
	concentration in river at SW-002	C_r2 =	8.01480 (mg/L)
	concentration in river at SW-003	C_r3 =	8.01314 (mg/L)
	concentration in river at SW-004	C_r4 =	8.01179 (mg/L)
	concentration in river at SW-004A	C_r4A =	8.00602 (mg/L)
	concentration in river at SW-005	C_r5 =	8.00513 (mg/L)
	concentration in river at USGS Gage	C_r6 =	8.00513 (mg/L)
	concentration in Colby Lake (H)	C_cl =	8.02641 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Closure Manganese		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.1500 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.1500 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.1500 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.1500 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.1500 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.1500 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.1500 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.1500 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.1500 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0086 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.1240 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.1240 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.1240 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.1240 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.1240 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.1240 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.1240 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.1240 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.0799 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.3549 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.5169 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.6823 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.1160 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.3549 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.5169 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.6823 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.1604 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.1240 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.1240 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.1240 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	357.30165 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.63166 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.24338 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	355.99089 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.90463 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	231.92170 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.35707 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.02521 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00308 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00349 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	260.08659 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	1.06620 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.02521 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00349 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	2.653.12463 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	4.84675 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.22787 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.54943 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	702.87651 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	7.96588 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	4.94969 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	1.64932 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	1.426.19265 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	4.10576 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	1.65555 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	358.1767 (mg/s)
	mass flux in river at SW-002	M_r2 =	715.0722 (mg/s)
	mass flux in river at SW-003	M_r3 =	947.3828 (mg/s)
	mass flux in river at SW-004	M_r4 =	1.208.5643 (mg/s)
	mass flux in river at SW-004A	M_r4A =	3.867.3130 (mg/s)
	mass flux in river at SW-005	M_r5 =	4.578.1553 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	4.584.7544 (mg/s)
	mass flux into Colby Lake	M_cl =	6.016.7063 (mg/s)
	High Flow		
	concentration in river at SW-001	C_r1 =	0.14829 (mg/L)
	concentration in river at SW-002	C_r2 =	0.14910 (mg/L)
	concentration in river at SW-003	C_r3 =	0.14930 (mg/L)
	concentration in river at SW-004	C_r4 =	0.14942 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.14978 (mg/L)
	concentration in river at SW-005	C_r5 =	0.14976 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.14975 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.14855 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Closure Sodium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	2.5000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	2.5000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	2.5000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	2.5000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	2.5000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	2.5000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	2.5000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	2.5000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	2.5000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	4.8000 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	13.3300 (mg/L)
	concentration of ground water into SW-002	C_g2 =	13.3300 (mg/L)
	concentration of ground water into SW-003	C_g3 =	13.3300 (mg/L)
	concentration of ground water into SW-004	C_g4 =	13.3300 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	13.3300 (mg/L)
	concentration of ground water into SW-005	C_g5 =	13.3300 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	13.3300 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	13.3300 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	1,062.1615 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	242.4332 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	353.1070 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	466.0941 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	7.1900 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	242.4332 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	353.1070 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	466.0941 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	4.6000 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	13.3300 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	13.3300 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	13.3300 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	5,955.02750 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	67.90302 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	135.84000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	5,933.18142 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	97.24790 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	3,865.36164 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	38.38532 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	335.15976 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	2.10418 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	2.38716 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00028 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	4,334.77653 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	114.61626 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	335.15976 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	2.38716 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00036 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	44,218.74389 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	521.02615 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	155.65718 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00531 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	34.05501 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	11,714.60843 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	856.33253 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	82.49488 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	177.30233 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	23,769.87750 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	441.36963 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	27.59250 (mg/s)
Mass balance at each node	mass flux in river at SW-001	M_r1 =	6,158.7705 (mg/s)
	mass flux in river at SW-002	M_r2 =	12,169.1998 (mg/s)
	mass flux in river at SW-003	M_r3 =	16,432.5982 (mg/s)
	mass flux in river at SW-004	M_r4 =	21,219.5385 (mg/s)
	mass flux in river at SW-004A	M_r4A =	66,149.0261 (mg/s)
	mass flux in river at SW-005	M_r5 =	78,719.9671 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	78,979.7643 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	103,218.6039 (mg/s)
	concentration in river at SW-001	C_r1 =	2.54979 (mg/L)
	concentration in river at SW-002	C_r2 =	2.54155 (mg/L)
	concentration in river at SW-003	C_r3 =	2.58972 (mg/L)
	concentration in river at SW-004	C_r4 =	2.62353 (mg/L)
	concentration in river at SW-004A	C_r4A =	2.56192 (mg/L)
	concentration in river at SW-005	C_r5 =	2.57506 (mg/L)
	concentration in river at USGS Gage	C_r6 =	2.57965 (mg/L)
	concentration in Colby Lake (H)	C_cl =	2.97454 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Closure Nickel		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0016 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0016 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0016 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0016 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0016 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0016 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0016 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0016 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0033 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0016 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0163 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0163 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0163 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0163 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0163 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0163 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0163 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0163 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.0069 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.1531 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.2229 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.2943 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.0190 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.1531 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.2229 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.2943 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0080 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0163 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0163 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0163 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	3.71594 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.08293 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.04387 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	3.70231 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.11877 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	2.41199 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.04688 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.00216 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00133 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00151 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	2.70490 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.13998 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.00216 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00151 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	27.59250 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.63633 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.09828 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.08999 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	7.30992 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	1.04584 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.05148 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.21654 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	14.83240 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.53905 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.03642 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	3.8427 (mg/s)
	mass flux in river at SW-002	M_r2 =	7.6658 (mg/s)
	mass flux in river at SW-003	M_r3 =	10.1277 (mg/s)
	mass flux in river at SW-004	M_r4 =	12.9762 (mg/s)
	mass flux in river at SW-004A	M_r4A =	41.3933 (mg/s)
	mass flux in river at SW-005	M_r5 =	49.7491 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	50.0171 (mg/s)
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C_r1 =	0.00159 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00160 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00160 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00160 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00160 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00163 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00163 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.00202 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Closure Lead		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0005 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0005 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0005 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0005 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0005 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0005 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0005 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0005 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0005 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0002 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0011 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0011 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0011 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0011 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0011 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0011 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0011 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0011 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.0092 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0183 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0267 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0352 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0183 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0267 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0352 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0007 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0011 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0011 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0011 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	1.19101 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00571 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.00425 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	1.18664 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.00817 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.77307 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00323 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.00291 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00016 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00018 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.86696 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.00963 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.00291 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00018 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	8.84375 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.04378 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.01177 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	2.34292 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.07195 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.01650 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.01490 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	4.75398 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.03708 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00552 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	1.2010 (mg/s)
	mass flux in river at SW-002	M_r2 =	2.3958 (mg/s)
	mass flux in river at SW-003	M_r3 =	3.1753 (mg/s)
	mass flux in river at SW-004	M_r4 =	4.0550 (mg/s)
	mass flux in river at SW-004A	M_r4A =	12.9543 (mg/s)
	mass flux in river at SW-005	M_r5 =	15.3692 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	15.4005 (mg/s)
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C_r1 =	0.00050 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00050 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00050 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00050 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00050 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00050 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00050 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.00052 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Closure Antimony		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0015 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0015 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0015 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0015 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0015 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0015 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0015 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0015 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0015 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0015 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0015 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0015 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0015 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0015 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0015 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0015 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0015 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0015 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	0.0094 (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.0800 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.0800 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0800 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.0004 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.0800 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.0800 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.0800 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0003 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0015 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0015 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0015 (mg/L)
	concentration of liner leakage from WWTF pond	C gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M s1 =	3.57302 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.00764 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.04245 (mg/s)
	mass flux of surface water into SW-002	M s2 =	3.55991 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.01094 (mg/s)
	mass flux of surface water into SW-003	M s3 =	2.31922 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.00432 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	0.00297 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.00048 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00041 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	2.60087 (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.01290 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	0.00297 (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00041 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M s4A =	26.53125 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.05863 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	0.05136 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	0.00189 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	7.02877 (mg/s)
	mass flux of ground water into SW-005	M g5 =	0.09636 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	0.04950 (mg/s)
mass flux of ground water into USGS Gage	M g6 =	0.01995 (mg/s)	
mass flux of surface water into Colby Lake	M scl =	14.26193 (mg/s)	
mass flux of ground water into Colby Lake	M gcl =	0.04967 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.01656 (mg/s)	
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M r1 =	3.6231 (mg/s)
	mass flux in river at SW-002	M r2 =	7.1940 (mg/s)
	mass flux in river at SW-003	M r3 =	9.5214 (mg/s)
	mass flux in river at SW-004	M r4 =	12.1385 (mg/s)
	mass flux in river at SW-004A	M r4A =	38.7816 (mg/s)
	mass flux in river at SW-005	M r5 =	45.9068 (mg/s)
	mass flux in river at USGS Gage	M r6 =	45.9762 (mg/s)
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C r1 =	0.00150 (mg/L)
	concentration in river at SW-002	C r2 =	0.00150 (mg/L)
	concentration in river at SW-003	C r3 =	0.00150 (mg/L)
	concentration in river at SW-004	C r4 =	0.00150 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00150 (mg/L)
	concentration in river at SW-005	C r5 =	0.00150 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00150 (mg/L)
	concentration in Colby Lake (H)	C cl =	0.00151 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Closure Selenium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0005 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0005 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0005 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0005 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0005 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0005 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0005 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0005 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0005 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0005 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0019 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0019 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0019 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0019 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0019 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0019 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0019 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0019 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.0392 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0029 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0029 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0029 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.0019 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0029 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0029 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0029 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0004 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0019 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0019 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0019 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	1.19101 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00973 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.01415 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	1.18664 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.01393 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.77307 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00550 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.01238 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00002 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.86696 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.01642 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.01238 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	8.84375 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.07466 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.00186 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.00900 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	2.34292 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.12270 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.01650 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.02540 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	4.75398 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.06324 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00552 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	1.2149 (mg/s)
	mass flux in river at SW-002	M_r2 =	2.4155 (mg/s)
	mass flux in river at SW-003	M_r3 =	3.2064 (mg/s)
	mass flux in river at SW-004	M_r4 =	4.1022 (mg/s)
	mass flux in river at SW-004A	M_r4A =	13.0315 (mg/s)
	mass flux in river at SW-005	M_r5 =	15.4971 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	15.5390 (mg/s)
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C_r1 =	0.00050 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00050 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00051 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00051 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00050 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00051 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00051 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.00055 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Closure Sulfate		
Input concentration data	concentration of surface water into SW-001	C_s1 =	9.0000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	9.0000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	9.0000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	9.0000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	9.0000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	9.0000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	9.0000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	9.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	9.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	22.0000 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	16.1300 (mg/L)
	concentration of ground water into SW-002	C_g2 =	16.1300 (mg/L)
	concentration of ground water into SW-003	C_g3 =	16.1300 (mg/L)
	concentration of ground water into SW-004	C_g4 =	16.1300 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	16.1300 (mg/L)
	concentration of ground water into SW-005	C_g5 =	16.1300 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	16.1300 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	16.1300 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	302.7047 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	592.8026 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	863.4244 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	1,139.7029 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	68.3000 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	592.8026 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	863.4244 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	1,139.7029 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	35.1700 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	16.1300 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	16.1300 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	16.1300 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M_s1 =	21,438.09900 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	82.16622 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	622.60000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	21,359.45311 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	117.67506 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	13,915.30190 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	46.44826 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	95.51696 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	5.14519 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	5.83713 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00070 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	15,605.19552 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	138.69170 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	95.51696 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	5.83713 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00088 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	159,187.47800 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	630.46901 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	380.61616 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.01299 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	323.49893 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	42,172.59036 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	1,036.20733 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	296.98159 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	214.54513 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	85,571.55900 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	534.08043 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	99.33300 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	22,142.8652 (mg/s)
	mass flux in river at SW-002	M_r2 =	43,619.9934 (mg/s)
	mass flux in river at SW-003	M_r3 =	57,688.2435 (mg/s)
	mass flux in river at SW-004	M_r4 =	73,533.4864 (mg/s)
	mass flux in river at SW-004A	M_r4A =	234,055.5615 (mg/s)
	mass flux in river at SW-005	M_r5 =	277,264.3592 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	277,775.8859 (mg/s)
	mass flux into Colby Lake	M_cl =	363,960.8563 (mg/s)
	High Flow		
	concentration in river at SW-001	C_r1 =	9.16735 (mg/L)
	concentration in river at SW-002	C_r2 =	9.09513 (mg/L)
	concentration in river at SW-003	C_r3 =	9.09146 (mg/L)
	concentration in river at SW-004	C_r4 =	9.09150 (mg/L)
	concentration in river at SW-004A	C_r4A =	9.06485 (mg/L)
	concentration in river at SW-005	C_r5 =	9.06976 (mg/L)
	concentration in river at USGS Gage	C_r6 =	9.07275 (mg/L)
	concentration in Colby Lake (H	C_cl =	9.39214 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Closure Thallium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0004 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0004 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0004 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0004 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0004 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0004 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0004 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0004 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0004 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0003 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0000 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0000 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0000 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0000 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0000 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0000 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0000 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0000 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.0002 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0000 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0000 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0000 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0000 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	0.95280 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00002 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.00809 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	0.94931 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.00003 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.61846 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00001 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.00007 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.69356 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.00003 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.00007 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	7.07500 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.00016 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	1.87434 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.00026 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.01320 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.00005 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	3.80318 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.00013 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00441 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	0.9609 (mg/s)
	mass flux in river at SW-002	M_r2 =	1.9103 (mg/s)
	mass flux in river at SW-003	M_r3 =	2.5288 (mg/s)
	mass flux in river at SW-004	M_r4 =	3.2225 (mg/s)
	mass flux in river at SW-004A	M_r4A =	10.2976 (mg/s)
	mass flux in river at SW-005	M_r5 =	12.1722 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	12.1855 (mg/s)
	mass flux into Colby Lake	M_cl =	15.9932 (mg/s)
	High Flow		
	concentration in river at SW-001	C_r1 =	0.00040 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00040 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00040 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00040 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00040 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00040 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00040 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.00039 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case	Closure		
Parameter	Vanadium		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0009 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0009 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0009 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0009 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0009 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0009 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0009 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0009 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0009 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0043 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0043 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0043 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0043 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0043 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0043 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0043 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0043 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0043 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	0.0503 (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.0914 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.1331 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.1757 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.0014 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.0914 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.1331 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.1757 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0017 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0043 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0043 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0043 (mg/L)
	concentration of liner leakage from WWTF pond	C gWTFp =	#N/A (mg/L)

Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M s1 =	2.14381 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.12190 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.12169 (mg/s)
	mass flux of surface water into SW-002	M s2 =	2.13595 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.03137 (mg/s)
	mass flux of surface water into SW-003	M s3 =	1.39153 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.01238 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep 003 =	0.01586 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3 003 =	0.00079 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO 003 =	0.00090 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s 003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	1.56052 (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.03697 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep 004 =	0.01586 (mg/s)
	mass flux of seepage from West Pit	M gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3 004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO 004 =	0.00090 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs 004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M s4A =	15.91875 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.16807 (mg/s)
	mass flux of West Pit overflow	M sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	0.05867 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	0.00663 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	4.21726 (mg/s)
	mass flux of ground water into SW-005	M g5 =	0.27624 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	0.02970 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.05719 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	8.55716 (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	0.14238 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.00993 (mg/s)

Mass balance at each node	High Flow		
	mass flux in river at SW-001	M r1 =	2.2874 (mg/s)
	mass flux in river at SW-002	M r2 =	4.4547 (mg/s)
	mass flux in river at SW-003	M r3 =	5.8762 (mg/s)
	mass flux in river at SW-004	M r4 =	7.4904 (mg/s)
	mass flux in river at SW-004A	M r4A =	23.6426 (mg/s)
	mass flux in river at SW-005	M r5 =	28.1361 (mg/s)
	mass flux in river at USGS Gage	M r6 =	28.2230 (mg/s)
mass flux into Colby Lake	M cl =	36.9324 (mg/s)	

Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C r1 =	0.00095 (mg/L)
	concentration in river at SW-002	C r2 =	0.00093 (mg/L)
	concentration in river at SW-003	C r3 =	0.00093 (mg/L)
	concentration in river at SW-004	C r4 =	0.00093 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00092 (mg/L)
	concentration in river at SW-005	C r5 =	0.00092 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00092 (mg/L)
	concentration in Colby Lake (H	C cl =	0.00103 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Closure Zinc		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0160 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0160 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0160 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0160 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0160 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0160 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0160 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0160 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0620 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0073 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	#N/A (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0275 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0275 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0275 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0275 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0275 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0275 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0275 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0275 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.2413 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	#N/A (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0900 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0900 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0900 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.0030 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0900 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0900 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0900 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0046 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0275 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0275 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0275 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	38.11218 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.14009 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.20744 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	37.97236 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.20062 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	24.73831 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.07919 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.07615 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00054 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00046 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	27.74257 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.23646 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.07615 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	#N/A (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00046 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	282.99996 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	1.07489 (mg/s)
	mass flux of West Pit overflow	M_sms =	#N/A (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.05779 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.01421 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	74.97349 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	1.76663 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.52797 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.36578 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	152.12722 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.91055 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.68429 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	38.4597 (mg/s)
	mass flux in river at SW-002	M_r2 =	76.6327 (mg/s)
	mass flux in river at SW-003	M_r3 =	101.6273 (mg/s)
	mass flux in river at SW-004	M_r4 =	129.5830 (mg/s)
	mass flux in river at SW-004A	M_r4A =	413.7298 (mg/s)
	mass flux in river at SW-005	M_r5 =	490.4699 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	491.3637 (mg/s)
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C_r1 =	0.01592 (mg/L)
	concentration in river at SW-002	C_r2 =	0.01598 (mg/L)
	concentration in river at SW-003	C_r3 =	0.01600 (mg/L)
	concentration in river at SW-004	C_r4 =	0.01602 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.01602 (mg/L)
	concentration in river at SW-005	C_r5 =	0.01604 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.01605 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.01641 (mg/L)

***Appendix H.15***  
***Partridge River***  
***Reasonable Alternative***  
***Post-Closure***

## Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

### FLOWS

Case Flows	Post-Closure Low Flow Conditions (no surface runoff)			
Total flow in Partridge River	flow in river at SW-001	Q_r1_L =	1.18	(cfs)
	flow in river at SW-002	Q_r2_L =	1.45	(cfs)
	flow in river at SW-003	Q_r3_L =	1.57	(cfs)
	flow in river at SW-004	Q_r4_L =	1.93	(cfs)
	flow in river at SW-004A	Q_r4a_L =	3.45	(cfs)
	flow in river at SW-005	Q_r5_L =	5.72	(cfs)
	flow in river at USGS Gage	Q_r6_L =	6.19	(cfs)
	total flow into Colby Lake	Q_cl_L =	7.75	(cfs)
	flow check	Q_ck_L =	7.75	(cfs)
Input flow data	surface water flow into SW-001	Q_s1_L =	-	(cfs)
	surface water flow into SW-002	Q_s2_L =	-	(cfs)
	surface water flow into SW-003	Q_s3_L =	-	(cfs)
	surface water flow into SW-004	Q_s4_L =	-	(cfs)
	surface water flow into SW-004A	Q_s4a_L =	-	(cfs)
	surface water flow into SW-005	Q_s5_L =	-	(cfs)
	surface water flow into USGS Gage	Q_s6_L =	-	(cfs)
	surface water flow into Colby Lake	Q_scl_L =	-	(cfs)
	surface water inflow from Hoyt Lakes WWTP	Q_shl_L =	0.39	(cfs)
	surface water inflow from discharges upstream of PM-1	Q_sns_L =	1.00	(cfs)
	surface water flow from West Pit overflow	Q_sms_L =	0.08	(cfs)
	ground water flow into SW-001	Q_g1_L =	0.18	(cfs)
	ground water flow into SW-002	Q_g2_L =	0.27	(cfs)
	ground water flow into SW-003	Q_g3_L =	0.11	(cfs)
	ground water flow into SW-004	Q_g4_L =	0.31	(cfs)
	ground water flow into SW-004A	Q_g4a_L =	1.39	(cfs)
	ground water flow into SW-005	Q_g5_L =	2.27	(cfs)
	ground water flow into USGS Gage	Q_g6_L =	0.47	(cfs)
	ground water flow into Colby Lake	Q_gcl_L =	1.17	(cfs)
	ground water seepage from East Pit to SW-003	Q_gep_003_L =	0.0112	(cfs)
	ground water seepage from East Pit to SW-004	Q_gep_004_L =	0.0112	(cfs)
	ground water seepage from West Pit	Q_gwp_L =	0.0401	(cfs)
	ground water liner leakage from Cat 1 stockpile	Q_gC12_L =	0.0062	(cfs)
	ground water liner leakage from Cat 2/3 stockpile to SW-003	Q_gC3_003_L =	0.0000	(cfs)
	ground water liner leakage from Cat 2/3 stockpile to SW-004	Q_gC3_004_L =	-	(cfs)
	ground water liner leakage from Cat 3LO stockpile to SW-003	Q_gC3LO_003_L =	0.0000	(cfs)
	ground water liner leakage from Cat 3LO stockpile to SW-004	Q_gC3LO_004_L =	0.0000	(cfs)
	ground water liner leakage from Cat 4 stockpile	Q_gC4_L =	-	(cfs)
	ground water liner leakage from LO SP	Q_gC4LO_L =	-	(cfs)
	ground water seepage from Overburden Storage	Q_gOS_L =	-	(cfs)
	ground water seepage from Overburden (Cat 1)	Q_gO12_L =	0.0457	(cfs)
	ground water liner leakage from Cat 1 sumps	Q_gC12s_L =	0.0000	(cfs)
	ground water liner leakage from Cat 2/3 sumps	Q_gC3s_L =	0.0000	(cfs)
	ground water liner leakage from Cat 3LO sumps	Q_gC3LOs_L =	0.0000	(cfs)
	ground water liner leakage from Cat 4 sumps	Q_gC4s_L =	-	(cfs)
	ground water liner leakage from LO SP sumps	Q_gC4LOs_L =	-	(cfs)
	ground water seepage from Overburden pond - PW1	Q_gOp1_L =	-	(cfs)
	ground water seepage from Overburden pond - PW7	Q_gOp7_L =	-	(cfs)
	ground water liner leakage from Haul Road pond - PW2	Q_gHRp2_L =	-	(cfs)
	ground water liner leakage from Haul Road pond - PW4	Q_gHRp4_L =	-	(cfs)
	ground water liner leakage from RTH pond - PW3	Q_gRTHp_L =	-	(cfs)
	ground water liner leakage from WWTF pond	Q_gWTFp_L =	-	(cfs)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Post-Closure Silver		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0001 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0001 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0001 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0001 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0001 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0001 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0001 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0001 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shi =	0.0001 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0001 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	0.0009 (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0006 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0006 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0006 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0006 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0006 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0006 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0006 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0006 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	0.0003 (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	0.0009 (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.0007 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.0007 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0007 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.0007 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.0007 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.0007 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	- (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0006 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0006 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0006 (mg/L)
	concentration of liner leakage from WWTF pond	C gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M s1 =	- (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.00280 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.00340 (mg/s)
	mass flux of surface water into SW-002	M s2 =	- (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.00416 (mg/s)
	mass flux of surface water into SW-003	M s3 =	- (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.00166 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	0.00011 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	- (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.00486 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	0.00011 (mg/s)
	mass flux of liner leakage from West Pit	M gwp =	0.00106 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.02157 (mg/s)
	mass flux of West Pit overflow	M sms =	0.00222 (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	0.00012 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	- (mg/s)
	mass flux of ground water into SW-005	M g5 =	0.03533 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.00732 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	0.01821 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shi =	0.00110 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M r1 =	0.0062 (mg/s)
	mass flux in river at SW-002	M r2 =	0.0104 (mg/s)
	mass flux in river at SW-003	M r3 =	0.0121 (mg/s)
	mass flux in river at SW-004	M r4 =	0.0182 (mg/s)
	mass flux in river at SW-004A	M r4A =	0.0421 (mg/s)
	mass flux in river at SW-005	M r5 =	0.0774 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M r6 =	0.0847 (mg/s)
	mass flux into Colby Lake	M cl =	0.1040 (mg/s)
	Low Flow		
	concentration in river at SW-001	C r1 =	0.00019 (mg/L)
	concentration in river at SW-002	C r2 =	0.00025 (mg/L)
	concentration in river at SW-003	C r3 =	0.00027 (mg/L)
	concentration in river at SW-004	C r4 =	0.00033 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00043 (mg/L)
	concentration in river at SW-005	C r5 =	0.00048 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00048 (mg/L)
	concentration in Colby Lake (H	C cl =	0.00017 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Post-Closure Aluminum		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0700 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0700 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0700 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0700 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0700 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0700 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0700 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0700 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0700 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0173 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	0.0186 (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.1250 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.1250 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.1250 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.1250 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.1250 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.1250 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.1250 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.1250 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.0159 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	0.0186 (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	1.6800 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	1.6800 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	1.6800 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.1400 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	1.6800 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	1.6800 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	1.6800 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.4106 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.1250 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.1250 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.1250 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.63675 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.48959 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.94651 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.37689 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.00501 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00095 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00015 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	1.10403 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.00501 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	0.02109 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00015 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	4.90183 (mg/s)
	mass flux of West Pit overflow	M_sms =	0.04414 (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.29442 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00004 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.18099 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	8.03013 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	1.66263 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	4.13888 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.77259 (mg/s)
Mass balance at each node	mass flux in river at SW-001	M_r1 =	1.1263 (mg/s)
	mass flux in river at SW-002	M_r2 =	2.0729 (mg/s)
	mass flux in river at SW-003	M_r3 =	2.4559 (mg/s)
	mass flux in river at SW-004	M_r4 =	3.5862 (mg/s)
	mass flux in river at SW-004A	M_r4A =	9.0076 (mg/s)
	mass flux in river at SW-005	M_r5 =	17.0377 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	18.7003 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	23.6118 (mg/s)
	concentration in river at SW-001	C_r1 =	0.03373 (mg/L)
	concentration in river at SW-002	C_r2 =	0.05060 (mg/L)
	concentration in river at SW-003	C_r3 =	0.05544 (mg/L)
	concentration in river at SW-004	C_r4 =	0.06570 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.09225 (mg/L)
	concentration in river at SW-005	C_r5 =	0.10525 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.10675 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.07450 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Post-Closure Arsenic		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0021 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0021 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0021 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0021 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0021 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0021 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0021 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0021 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0021 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0065 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	0.0902 (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0022 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0022 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0022 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0022 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0022 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0022 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0022 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0022 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.0177 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	0.0902 (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.4854 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.7070 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.7100 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.0027 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.4854 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.7070 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.7100 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0016 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0022 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0022 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0022 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.01100 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.18395 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.01636 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00651 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.00559 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00040 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00006 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.01908 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.00559 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	0.10249 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00006 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.08470 (mg/s)
	mass flux of West Pit overflow	M_sms =	0.21447 (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.08506 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.00349 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.13876 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.02873 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.07152 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.02329 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	0.1950 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.2113 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.2239 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.3511 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.7358 (mg/s)
	mass flux in river at SW-005	M_r5 =	0.8776 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	0.9063 (mg/s)
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C_r1 =	0.00584 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00516 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00505 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00643 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00757 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00542 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00517 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.00406 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Post-Closure Boron		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0450 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0450 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0450 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0450 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0450 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0450 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0450 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0450 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0450 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0960 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	0.2971 (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0870 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0870 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0870 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0870 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0870 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0870 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0870 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0870 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.4226 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	0.2971 (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.7600 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.7600 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.7600 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.0370 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.7600 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.7600 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.7600 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0622 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0870 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0870 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0870 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.44318 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	2.71680 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.65877 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.26232 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.13335 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00043 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00007 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.76841 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.13335 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	0.33751 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00007 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	3.41167 (mg/s)
	mass flux of West Pit overflow	M_sms =	0.70629 (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.13319 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00002 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.04783 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	5.58897 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	1.15719 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	2.88066 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.49667 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	3.1800 (mg/s)
	mass flux in river at SW-002	M_r2 =	3.8188 (mg/s)
	mass flux in river at SW-003	M_r3 =	4.2149 (mg/s)
	mass flux in river at SW-004	M_r4 =	5.4543 (mg/s)
	mass flux in river at SW-004A	M_r4A =	9.7533 (mg/s)
	mass flux in river at SW-005	M_r5 =	15.3422 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	16.4994 (mg/s)
	mass flux into Colby Lake	M_cl =	19.8767 (mg/s)
	Low Flow		
	concentration in river at SW-001	C_r1 =	0.09463 (mg/L)
	concentration in river at SW-002	C_r2 =	0.09322 (mg/L)
	concentration in river at SW-003	C_r3 =	0.09515 (mg/L)
	concentration in river at SW-004	C_r4 =	0.09993 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.09989 (mg/L)
	concentration in river at SW-005	C_r5 =	0.09477 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.09418 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.05616 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Post-Closure Barium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0077 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0077 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0077 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0077 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0077 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0077 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0077 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0077 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0077 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0050 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	0.0857 (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0219 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0219 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0219 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0219 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0219 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0219 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0219 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0219 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.0480 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	0.0857 (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.1900 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.1900 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.1900 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.0140 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.1900 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.1900 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.1900 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0168 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0219 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0219 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0219 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.11166 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.14150 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.16598 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.06609 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.01515 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00011 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00002 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.19360 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.01515 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	0.09735 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00002 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.85959 (mg/s)
	mass flux of West Pit overflow	M_sms =	0.20372 (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.03330 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.01810 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	1.40816 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.29156 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.72579 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.08476 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	0.2532 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.4191 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.5005 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.8066 (mg/s)
	mass flux in river at SW-004A	M_r4A =	1.9213 (mg/s)
	mass flux in river at SW-005	M_r5 =	3.3295 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	3.6211 (mg/s)
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C_r1 =	0.00758 (mg/L)
	concentration in river at SW-002	C_r2 =	0.01023 (mg/L)
	concentration in river at SW-003	C_r3 =	0.01130 (mg/L)
	concentration in river at SW-004	C_r4 =	0.01478 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.01968 (mg/L)
	concentration in river at SW-005	C_r5 =	0.02057 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.02067 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.01090 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Post-Closure Beryllium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0001 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0001 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0001 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0001 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0001 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0001 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0001 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0001 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0001 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0001 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	0.0008 (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0001 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0001 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0001 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0001 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0001 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0001 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0001 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0001 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.0001 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	0.0008 (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0002 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0002 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	- (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0001 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0001 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0001 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00074 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.00283 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.00110 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00044 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.00004 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.00128 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.00004 (mg/s)
	mass flux of liner leakage from West Pit	M_gwp =	0.00091 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.00569 (mg/s)
	mass flux of West Pit overflow	M_sms =	0.00190 (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.00004 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.00931 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.00193 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.00480 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00110 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	0.0036 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.0047 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.0051 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.0074 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.0150 (mg/s)
	mass flux in river at SW-005	M_r5 =	0.0243 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	0.0262 (mg/s)
	mass flux into Colby Lake	M_cl =	0.0321 (mg/s)
	Low Flow		
	concentration in river at SW-001	C_r1 =	0.00011 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00011 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00012 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00013 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00015 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00015 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00015 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.00012 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Post-Closure Calcium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	17.0000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	17.0000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	17.0000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	17.0000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	17.0000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	17.0000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	17.0000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	17.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	17.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	24.5000 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	107.0881 (mg/L)
	concentration of ground water into SW-001	C_g1 =	14.7900 (mg/L)
	concentration of ground water into SW-002	C_g2 =	14.7900 (mg/L)
	concentration of ground water into SW-003	C_g3 =	14.7900 (mg/L)
	concentration of ground water into SW-004	C_g4 =	14.7900 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	14.7900 (mg/L)
	concentration of ground water into SW-005	C_g5 =	14.7900 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	14.7900 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	14.7900 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	167.2978 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	107.0881 (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	540.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	540.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	540.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	15.8000 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	540.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	540.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	540.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	9.3700 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	14.7900 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	14.7900 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	14.7900 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	75.34026 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	693.35000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	111.99140 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	44.59378 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	52.78997 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.30659 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.04900 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00044 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	130.62927 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	52.78997 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	121.64796 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.04900 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00042 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	579.98463 (mg/s)
	mass flux of West Pit overflow	M_sms =	254.56973 (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	94.63370 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.01183 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	20.42604 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	950.12439 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	196.72179 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	489.71169 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	187.62900 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	768.6903 (mg/s)
	mass flux in river at SW-002	M_r2 =	880.6817 (mg/s)
	mass flux in river at SW-003	M_r3 =	978.4214 (mg/s)
	mass flux in river at SW-004	M_r4 =	1.283.5385 (mg/s)
	mass flux in river at SW-004A	M_r4A =	2.233.1644 (mg/s)
	mass flux in river at SW-005	M_r5 =	3.183.2888 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	3.380.0106 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	4.057.3513 (mg/s)
	Low Flow		
	concentration in river at SW-001	C_r1 =	23.01881 (mg/L)
	concentration in river at SW-002	C_r2 =	21.49781 (mg/L)
	concentration in river at SW-003	C_r3 =	22.08754 (mg/L)
	concentration in river at SW-004	C_r4 =	23.51608 (mg/L)
	concentration in river at SW-004A	C_r4A =	22.87113 (mg/L)
	concentration in river at SW-005	C_r5 =	19.66423 (mg/L)
	concentration in river at USGS Gage	C_r6 =	19.29415 (mg/L)
	concentration in Colby Lake (H)	C_cl =	18.85197 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Post-Closure Cadmium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0001 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0001 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0001 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0001 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0001 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0001 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0001 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0001 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0001 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0001 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	0.0002 (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0001 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0001 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0001 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0001 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0001 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0001 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0001 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0001 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.0002 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	0.0002 (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0002 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0002 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0001 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0001 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0001 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0001 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00051 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.00283 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.00076 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00030 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.00007 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.00088 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.00007 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	0.00019 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.00392 (mg/s)
	mass flux of West Pit overflow	M_sms =	0.00040 (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.00003 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.00642 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.00133 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.00331 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00110 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	0.0033 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.0041 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.0045 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.0056 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.0100 (mg/s)
	mass flux in river at SW-005	M_r5 =	0.0164 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	0.0177 (mg/s)
	mass flux into Colby Lake	M_cl =	0.0221 (mg/s)
	Low Flow		
	concentration in river at SW-001	C_r1 =	0.00010 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00010 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00010 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00010 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00010 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00010 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00010 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.00010 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Post-Closure Chloride		
Input concentration data	concentration of surface water into SW-001	C_s1 =	8.0000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	8.0000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	8.0000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	8.0000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	8.0000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	8.0000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	8.0000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	8.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	8.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	1.6000 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	32.2864 (mg/L)
	concentration of ground water into SW-001	C_g1 =	6.6000 (mg/L)
	concentration of ground water into SW-002	C_g2 =	6.6000 (mg/L)
	concentration of ground water into SW-003	C_g3 =	6.6000 (mg/L)
	concentration of ground water into SW-004	C_g4 =	6.6000 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	6.6000 (mg/L)
	concentration of ground water into SW-005	C_g5 =	6.6000 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	6.6000 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	6.6000 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	126.4145 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	32.2864 (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	- (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	- (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	- (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	2.3300 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	- (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	- (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	- (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	5.3500 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	6.6000 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	6.6000 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	6.6000 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	33.62040 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	45.28000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	49.97588 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	19.89986 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	39.88945 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	- (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	- (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	58.29298 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	39.88945 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	36.67607 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	- (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	- (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	258.81667 (mg/s)
	mass flux of West Pit overflow	M_sms =	76.75112 (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	- (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	3.01219 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	423.99060 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	87.78660 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	218.53260 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	88.29600 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	78.9004 (mg/s)
	mass flux in river at SW-002	M_r2 =	128.8763 (mg/s)
	mass flux in river at SW-003	M_r3 =	188.6656 (mg/s)
	mass flux in river at SW-004	M_r4 =	323.5241 (mg/s)
	mass flux in river at SW-004A	M_r4A =	662.1041 (mg/s)
	mass flux in river at SW-005	M_r5 =	1,086.0947 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	1,173.8813 (mg/s)
	mass flux into Colby Lake	M_cl =	1,480.7099 (mg/s)
	Low Flow		
	concentration in river at SW-001	C_r1 =	2.36271 (mg/L)
	concentration in river at SW-002	C_r2 =	3.14592 (mg/L)
	concentration in river at SW-003	C_r3 =	4.25906 (mg/L)
	concentration in river at SW-004	C_r4 =	5.92738 (mg/L)
	concentration in river at SW-004A	C_r4A =	6.78099 (mg/L)
	concentration in river at SW-005	C_r5 =	6.70917 (mg/L)
	concentration in river at USGS Gage	C_r6 =	6.70088 (mg/L)
	concentration in Colby Lake (H)	C_cl =	8.26018 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Post-Closure Cobalt		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0005 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0005 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0005 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0005 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0005 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0005 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0005 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0005 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0005 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0005 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	0.0069 (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0017 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0017 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0017 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0017 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0017 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0017 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0017 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0017 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.0001 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	0.0069 (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0520 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0520 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0520 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.0013 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0520 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0520 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0520 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0011 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0017 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0017 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0017 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00841 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.01415 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.01249 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00497 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.00003 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00003 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.01457 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.00003 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	0.00778 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.06470 (mg/s)
	mass flux of West Pit overflow	M_sms =	0.01629 (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.00911 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.00168 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.10600 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.02195 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.05463 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00552 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	0.0226 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.0350 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.0401 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.0625 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.1543 (mg/s)
	mass flux in river at SW-005	M_r5 =	0.2603 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	0.2822 (mg/s)
	mass flux into Colby Lake	M_cl =	0.3424 (mg/s)
	Low Flow		
	concentration in river at SW-001	C_r1 =	0.00068 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00086 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00090 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00114 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00158 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00161 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00161 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.00077 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Post-Closure Copper		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0017 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0017 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0017 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0017 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0017 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0017 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0017 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0017 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0190 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0012 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	0.0060 (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0030 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0030 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0030 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0030 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0030 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0030 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0030 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0030 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.0010 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	0.0060 (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0920 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0920 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0920 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.0170 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0920 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0920 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0920 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0214 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0030 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0030 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0030 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.01503 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.03509 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.02234 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00889 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.00030 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00005 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.02606 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.00030 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	0.00682 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.11568 (mg/s)
	mass flux of West Pit overflow	M_sms =	0.01426 (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.01612 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.02198 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.18951 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.03924 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.09768 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.20970 (mg/s)
Mass balance at each node			Low Flow
	mass flux in river at SW-001	M_r1 =	0.0501 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.0725 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.0817 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.1149 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.2829 (mg/s)
	mass flux in river at SW-005	M_r5 =	0.4725 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	0.5117 (mg/s)
	mass flux into Colby Lake	M_cl =	0.8191 (mg/s)
			Low Flow
Convert mass flux to concentration	concentration in river at SW-001	C_r1 =	0.00150 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00177 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00184 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00211 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00290 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00292 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00292 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.00207 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Post-Closure Fluoride		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0700 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0700 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0700 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0700 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0700 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0700 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0700 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0700 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0700 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.1400 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	0.4152 (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.2800 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.2800 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.2800 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.2800 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.2800 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.2800 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.2800 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.2800 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.6061 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	0.4152 (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0621 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0621 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0621 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.4200 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0621 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0621 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0621 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.2239 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.2800 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.2800 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.2800 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	1.42632 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	3.96200 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	2.12019 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.84424 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.19124 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00004 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	2.47304 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.19124 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	0.47161 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	10.98010 (mg/s)
	mass flux of West Pit overflow	M_sms =	0.98693 (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.01088 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.54297 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	17.98748 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	3.72428 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	9.27108 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.77259 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	5.3883 (mg/s)
	mass flux in river at SW-002	M_r2 =	7.5085 (mg/s)
	mass flux in river at SW-003	M_r3 =	8.5440 (mg/s)
	mass flux in river at SW-004	M_r4 =	11.6799 (mg/s)
	mass flux in river at SW-004A	M_r4A =	24.2008 (mg/s)
	mass flux in river at SW-005	M_r5 =	42.1863 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	45.9126 (mg/s)
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C_r1 =	0.16136 (mg/L)
	concentration in river at SW-002	C_r2 =	0.18329 (mg/L)
	concentration in river at SW-003	C_r3 =	0.19288 (mg/L)
	concentration in river at SW-004	C_r4 =	0.21399 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.24785 (mg/L)
	concentration in river at SW-005	C_r5 =	0.26061 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.26208 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.10301 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Post-Closure Iron		
Input concentration data	concentration of surface water into SW-001	C_s1 =	1.6000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	1.6000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	1.6000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	1.6000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	1.6000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	1.6000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	1.6000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	1.6000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	1.6000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0300 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	0.1000 (mg/L)
	concentration of ground water into SW-001	C_g1 =	2.8440 (mg/L)
	concentration of ground water into SW-002	C_g2 =	2.8440 (mg/L)
	concentration of ground water into SW-003	C_g3 =	2.8440 (mg/L)
	concentration of ground water into SW-004	C_g4 =	2.8440 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	2.8440 (mg/L)
	concentration of ground water into SW-005	C_g5 =	2.8440 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	2.8440 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	2.8440 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.0003 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	0.1000 (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.8100 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.8100 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.8100 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.1500 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.8100 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.8100 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.8100 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.2255 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	2.8440 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	2.8440 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	2.8440 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	14.48734 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.84900 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	21.53506 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	8.57503 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.00009 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00046 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00007 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	25.11897 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.00009 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	0.11360 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00007 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	111.52646 (mg/s)
	mass flux of West Pit overflow	M_sms =	0.23772 (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.14195 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00002 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.19392 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	182.70140 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	37.82804 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	94.16768 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	17.65920 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	15.3363 (mg/s)
	mass flux in river at SW-002	M_r2 =	36.8714 (mg/s)
	mass flux in river at SW-003	M_r3 =	45.4471 (mg/s)
	mass flux in river at SW-004	M_r4 =	70.6798 (mg/s)
	mass flux in river at SW-004A	M_r4A =	182.7798 (mg/s)
	mass flux in river at SW-005	M_r5 =	365.4813 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	403.3093 (mg/s)
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C_r1 =	0.45925 (mg/L)
	concentration in river at SW-002	C_r2 =	0.90005 (mg/L)
	concentration in river at SW-003	C_r3 =	1.02595 (mg/L)
	concentration in river at SW-004	C_r4 =	1.29494 (mg/L)
	concentration in river at SW-004A	C_r4A =	1.87195 (mg/L)
	concentration in river at SW-005	C_r5 =	2.25770 (mg/L)
	concentration in river at USGS Gage	C_r6 =	2.30221 (mg/L)
	concentration in Colby Lake (H)	C_cl =	1.68051 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Post-Closure Hardness		
Input concentration data	concentration of surface water into SW-001	C_s1 =	110.0000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	110.0000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	110.0000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	110.0000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	110.0000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	110.0000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	110.0000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	110.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	110.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	110.0000 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	361.7109 (mg/L)
	concentration of ground water into SW-001	C_g1 =	66.4200 (mg/L)
	concentration of ground water into SW-002	C_g2 =	66.4200 (mg/L)
	concentration of ground water into SW-003	C_g3 =	66.4200 (mg/L)
	concentration of ground water into SW-004	C_g4 =	66.4200 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	66.4200 (mg/L)
	concentration of ground water into SW-005	C_g5 =	66.4200 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	66.4200 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	66.4200 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	561.6452 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	361.7109 (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	1,729.3495 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	1,729.3495 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	1,729.3495 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	71.5000 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	1,729.3495 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	1,729.3495 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	1,729.3495 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	43.5200 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	66.4200 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	66.4200 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	66.4200 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	338.34348 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	3,113.00000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	502.93907 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	200.26497 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	177.22433 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.98184 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.15692 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00139 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	586.63934 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	177.22433 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	410.88989 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.15692 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00133 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	2,604.63688 (mg/s)
	mass flux of West Pit overflow	M_sms =	859.85926 (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	303.06434 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.03789 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	92.43429 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	4,266.88722 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	883.45242 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	2,199.23262 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	1,214.07000 (mg/s)
Mass balance at each node	mass flux in river at SW-001	M_r1 =	3,451.3435 (mg/s)
	mass flux in river at SW-002	M_r2 =	3,954.2825 (mg/s)
	mass flux in river at SW-003	M_r3 =	4,332.9120 (mg/s)
	mass flux in river at SW-004	M_r4 =	5,507.8252 (mg/s)
	mass flux in river at SW-004A	M_r4A =	9,367.8579 (mg/s)
	mass flux in river at SW-005	M_r5 =	13,634.7451 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	14,518.1975 (mg/s)
	mass flux into Colby Lake	M_cl =	17,931.5002 (mg/s)
Convert mass flux to concentration	concentration in river at SW-001	C_r1 =	103.35220 (mg/L)
	concentration in river at SW-002	C_r2 =	96.52572 (mg/L)
	concentration in river at SW-003	C_r3 =	97.81406 (mg/L)
	concentration in river at SW-004	C_r4 =	100.91047 (mg/L)
	concentration in river at SW-004A	C_r4A =	95.94164 (mg/L)
	concentration in river at SW-005	C_r5 =	84.22633 (mg/L)
	concentration in river at USGS Gage	C_r6 =	82.87437 (mg/L)
	concentration in Colby Lake (H)	C_cl =	110.49328 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Post-Closure Potassium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	1.3000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	1.3000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	1.3000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	1.3000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	1.3000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	1.3000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	1.3000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	1.3000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	1.3000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	2.7000 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	17.5871 (mg/L)
	concentration of ground water into SW-001	C_g1 =	1.7500 (mg/L)
	concentration of ground water into SW-002	C_g2 =	1.7500 (mg/L)
	concentration of ground water into SW-003	C_g3 =	1.7500 (mg/L)
	concentration of ground water into SW-004	C_g4 =	1.7500 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	1.7500 (mg/L)
	concentration of ground water into SW-005	C_g5 =	1.7500 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	1.7500 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	1.7500 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	29.8851 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	17.5871 (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	49.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	49.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	49.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	4.4500 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	49.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	49.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	49.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	2.2600 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	1.7500 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	1.7500 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	1.7500 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	8.91450 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	76.41000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	13.25118 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	5.27648 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	9.43011 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.02782 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00445 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00004 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	15.45647 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	9.43011 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	19.97830 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00445 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00004 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	68.62563 (mg/s)
	mass flux of West Pit overflow	M_sms =	41.80810 (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	8.58713 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00107 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	5.75290 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	112.42175 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	23.27675 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	57.94425 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	14.34810 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	85.3245 (mg/s)
	mass flux in river at SW-002	M_r2 =	98.5757 (mg/s)
	mass flux in river at SW-003	M_r3 =	113.3146 (mg/s)
	mass flux in river at SW-004	M_r4 =	158.1840 (mg/s)
	mass flux in river at SW-004A	M_r4A =	282.9588 (mg/s)
	mass flux in river at SW-005	M_r5 =	395.3806 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	418.6573 (mg/s)
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C_r1 =	2.55508 (mg/L)
	concentration in river at SW-002	C_r2 =	2.40627 (mg/L)
	concentration in river at SW-003	C_r3 =	2.55804 (mg/L)
	concentration in river at SW-004	C_r4 =	2.89813 (mg/L)
	concentration in river at SW-004A	C_r4A =	2.89794 (mg/L)
	concentration in river at SW-005	C_r5 =	2.44240 (mg/L)
	concentration in river at USGS Gage	C_r6 =	2.38983 (mg/L)
	concentration in Colby Lake (H)	C_cl =	1.73152 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Post-Closure Magnesium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	8.0000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	8.0000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	8.0000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	8.0000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	8.0000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	8.0000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	8.0000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	8.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	8.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	10.5000 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	23.0020 (mg/L)
	concentration of ground water into SW-001	C_g1 =	8.0200 (mg/L)
	concentration of ground water into SW-002	C_g2 =	8.0200 (mg/L)
	concentration of ground water into SW-003	C_g3 =	8.0200 (mg/L)
	concentration of ground water into SW-004	C_g4 =	8.0200 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	8.0200 (mg/L)
	concentration of ground water into SW-005	C_g5 =	8.0200 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	8.0200 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	8.0200 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	34.9635 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	23.0020 (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	93.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	93.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	93.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	9.0100 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	93.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	93.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	93.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	4.8800 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	8.0200 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	8.0200 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	8.0200 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	40.85388 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	297.15000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	60.72826 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	24.18135 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	11.03256 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.05280 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00844 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00007 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	70.83480 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	11.03256 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	26.12940 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00844 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00007 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	314.50147 (mg/s)
	mass flux of West Pit overflow	M_sms =	54.68036 (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	16.29803 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00204 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	11.64801 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	515.21282 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	106.67402 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	265.55022 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	88.29600 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	338.0039 (mg/s)
	mass flux in river at SW-002	M_r2 =	398.7321 (mg/s)
	mass flux in river at SW-003	M_r3 =	434.0074 (mg/s)
	mass flux in river at SW-004	M_r4 =	542.0127 (mg/s)
	mass flux in river at SW-004A	M_r4A =	939.1426 (mg/s)
	mass flux in river at SW-005	M_r5 =	1,454.3554 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	1,561.0295 (mg/s)
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C_r1 =	10.12169 (mg/L)
	concentration in river at SW-002	C_r2 =	9.73322 (mg/L)
	concentration in river at SW-003	C_r3 =	9.79757 (mg/L)
	concentration in river at SW-004	C_r4 =	9.93037 (mg/L)
	concentration in river at SW-004A	C_r4A =	9.61830 (mg/L)
	concentration in river at SW-005	C_r5 =	8.98403 (mg/L)
	concentration in river at USGS Gage	C_r6 =	8.91084 (mg/L)
	concentration in Colby Lake (H)	C_cl =	8.37791 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Post-Closure Manganese		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.1500 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.1500 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.1500 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.1500 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.1500 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.1500 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.1500 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.1500 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.1500 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0086 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	0.0100 (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.1240 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.1240 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.1240 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.1240 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.1240 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.1240 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.1240 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.1240 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.0002 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	0.0100 (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.7500 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.7500 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.7500 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.1160 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.7500 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.7500 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.7500 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.1604 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.1240 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.1240 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.1240 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.63166 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.24338 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.93894 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.37388 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.00006 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00043 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00007 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	1.09520 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.00006 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	0.01136 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00007 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	4.86262 (mg/s)
	mass flux of West Pit overflow	M_sms =	0.02377 (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.13144 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00002 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.14996 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	7.96588 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	1.64932 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	4.10576 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	1.65555 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	0.8750 (mg/s)
	mass flux in river at SW-002	M_r2 =	1.8140 (mg/s)
	mass flux in river at SW-003	M_r3 =	2.1884 (mg/s)
	mass flux in river at SW-004	M_r4 =	3.2951 (mg/s)
	mass flux in river at SW-004A	M_r4A =	8.4629 (mg/s)
	mass flux in river at SW-005	M_r5 =	16.4268 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	18.0781 (mg/s)
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C_r1 =	0.02620 (mg/L)
	concentration in river at SW-002	C_r2 =	0.04428 (mg/L)
	concentration in river at SW-003	C_r3 =	0.04940 (mg/L)
	concentration in river at SW-004	C_r4 =	0.06037 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.08667 (mg/L)
	concentration in river at SW-005	C_r5 =	0.10149 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.10320 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.14150 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Post-Closure Sodium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	2.5000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	2.5000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	2.5000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	2.5000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	2.5000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	2.5000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	2.5000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	2.5000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	2.5000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	4.8000 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	324.8351 (mg/L)
	concentration of ground water into SW-001	C_g1 =	13.3300 (mg/L)
	concentration of ground water into SW-002	C_g2 =	13.3300 (mg/L)
	concentration of ground water into SW-003	C_g3 =	13.3300 (mg/L)
	concentration of ground water into SW-004	C_g4 =	13.3300 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	13.3300 (mg/L)
	concentration of ground water into SW-005	C_g5 =	13.3300 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	13.3300 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	13.3300 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	1,108.9408 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	324.8351 (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	681.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	681.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	681.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	7.1900 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	681.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	681.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	681.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	4.6000 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	13.3300 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	13.3300 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	13.3300 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	67.90302 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	135.84000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	100.93613 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	40.19169 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	349.92072 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.38664 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.06179 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00055 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	117.73415 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	349.92072 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	369.00037 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.06179 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00053 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	522.73125 (mg/s)
	mass flux of West Pit overflow	M_sms =	772.19807 (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	119.34362 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.01492 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	9.29514 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	856.33253 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	177.30233 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	441.36963 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	27.59250 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	203.7430 (mg/s)
	mass flux in river at SW-002	M_r2 =	304.6792 (mg/s)
	mass flux in river at SW-003	M_r3 =	695.2405 (mg/s)
	mass flux in river at SW-004	M_r4 =	1,531.9596 (mg/s)
	mass flux in river at SW-004A	M_r4A =	2,955.5417 (mg/s)
	mass flux in river at SW-005	M_r5 =	3,811.8742 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	3,989.1765 (mg/s)
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C_r1 =	6.10119 (mg/L)
	concentration in river at SW-002	C_r2 =	7.43735 (mg/L)
	concentration in river at SW-003	C_r3 =	15.69483 (mg/L)
	concentration in river at SW-004	C_r4 =	28.06746 (mg/L)
	concentration in river at SW-004A	C_r4A =	30.26941 (mg/L)
	concentration in river at SW-005	C_r5 =	23.54721 (mg/L)
	concentration in river at USGS Gage	C_r6 =	22.77145 (mg/L)
	concentration in Colby Lake (H)	C_cl =	10.92471 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Post-Closure Nickel		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0016 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0016 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0016 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0016 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0016 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0016 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0016 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0016 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0033 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0016 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	0.0608 (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0163 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0163 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0163 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0163 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0163 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0163 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0163 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0163 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.0007 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	0.0608 (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.4787 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.6973 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.8600 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.0190 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.4787 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.6973 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.8600 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0080 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0163 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0163 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0163 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.08293 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.04387 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.12327 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.04909 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.00024 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00040 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00008 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.14379 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.00024 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	0.06908 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00008 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.63841 (mg/s)
	mass flux of West Pit overflow	M_sms =	0.14457 (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.08390 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.02456 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	1.04584 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.21654 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.53905 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.03642 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	0.1268 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.2501 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.2969 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.5131 (mg/s)
	mass flux in river at SW-004A	M_r4A =	1.4045 (mg/s)
	mass flux in river at SW-005	M_r5 =	2.4503 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	2.6669 (mg/s)
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C_r1 =	0.00380 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00610 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00677 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00940 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.01438 (mg/L)
	concentration in river at SW-005	C_r5 =	0.01514 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.01522 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.00455 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Post-Closure Lead		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0005 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0005 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0005 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0005 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0005 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0005 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0005 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0005 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0005 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0002 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	0.0077 (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0011 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0011 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0011 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0011 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0011 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0011 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0011 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0011 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.0131 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	0.0077 (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0528 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0528 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0528 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0528 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0528 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0528 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0007 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0011 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0011 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0011 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00571 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.00425 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.00848 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00338 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.00413 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00003 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.00989 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.00413 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	0.00880 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.04392 (mg/s)
	mass flux of West Pit overflow	M_sms =	0.01841 (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.00925 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.07195 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.01490 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.03708 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00552 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	0.0100 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.0184 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.0260 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.0488 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.1204 (mg/s)
	mass flux in river at SW-005	M_r5 =	0.1923 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	0.2072 (mg/s)
	mass flux into Colby Lake	M_cl =	0.2498 (mg/s)
	Low Flow		
	concentration in river at SW-001	C_r1 =	0.00030 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00045 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00059 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00089 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00123 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00119 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00118 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.00072 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Post-Closure Antimony		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0015 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0015 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0015 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0015 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0015 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0015 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0015 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0015 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0015 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0015 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	0.1098 (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0015 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0015 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0015 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0015 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0015 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0015 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0015 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0015 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.0126 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	0.1098 (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0800 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0800 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0800 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.0004 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0800 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0800 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0800 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0003 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0015 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0015 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0015 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00764 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.04245 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.01136 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00452 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.00399 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00005 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.01325 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.00399 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	0.12477 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.05882 (mg/s)
	mass flux of West Pit overflow	M_sms =	0.26110 (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.01402 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.00052 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.09636 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.01995 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.04967 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.01656 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	0.0501 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.0614 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.0700 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.2120 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.5465 (mg/s)
	mass flux in river at SW-005	M_r5 =	0.6428 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	0.6628 (mg/s)
	mass flux into Colby Lake	M_cl =	0.7290 (mg/s)
	Low Flow		
	concentration in river at SW-001	C_r1 =	0.00150 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00150 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00158 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00388 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00560 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00397 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00378 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.00373 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Post-Closure Selenium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0005 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0005 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0005 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0005 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0005 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0005 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0005 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0005 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0005 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0005 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	0.0108 (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0019 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0019 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0019 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0019 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0019 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0019 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0019 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0019 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.0349 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	0.0108 (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0029 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0029 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0029 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.0019 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0029 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0029 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0029 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0004 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0019 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0019 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0019 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00973 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.01415 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.01446 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00576 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.01101 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.01687 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.01101 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	0.01224 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.07490 (mg/s)
	mass flux of West Pit overflow	M_sms =	0.02562 (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.00051 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.00246 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.12270 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.02540 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.06324 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00552 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	0.0239 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.0383 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.0551 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.0952 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.1987 (mg/s)
	mass flux in river at SW-005	M_r5 =	0.3214 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	0.3468 (mg/s)
Convert mass flux to concentration	Low Flow		
	concentration in river at SW-001	C_r1 =	0.00072 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00094 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00124 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00174 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00204 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00199 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00198 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.00089 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Post-Closure Sulfate		
Input concentration data	concentration of surface water into SW-001	C_s1 =	9.0000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	9.0000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	9.0000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	9.0000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	9.0000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	9.0000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	9.0000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	9.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	9.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	22.0000 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	270.8597 (mg/L)
	concentration of ground water into SW-001	C_g1 =	16.1300 (mg/L)
	concentration of ground water into SW-002	C_g2 =	16.1300 (mg/L)
	concentration of ground water into SW-003	C_g3 =	16.1300 (mg/L)
	concentration of ground water into SW-004	C_g4 =	16.1300 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	16.1300 (mg/L)
	concentration of ground water into SW-005	C_g5 =	16.1300 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	16.1300 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	16.1300 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	334.5955 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	270.8597 (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	1,854.0847 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	2,340.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	2,340.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	68.3000 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	1,854.0847 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	2,340.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	2,340.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	35.1700 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	16.1300 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	16.1300 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	16.1300 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	82.16622 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	622.60000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	122.13802 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	48.63406 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	105.57995 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	1.32854 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.21233 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00189 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	142.46451 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	105.57995 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	307.68628 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.21233 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00180 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	632.53226 (mg/s)
	mass flux of West Pit overflow	M_sms =	643.88758 (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	324.92389 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.04063 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	88.29738 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	1,036.20733 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	214.54513 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	534.08043 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	99.33300 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	704.7662 (mg/s)
	mass flux in river at SW-002	M_r2 =	826.9042 (mg/s)
	mass flux in river at SW-003	M_r3 =	962.6610 (mg/s)
	mass flux in river at SW-004	M_r4 =	1,538.6077 (mg/s)
	mass flux in river at SW-004A	M_r4A =	3,228.2895 (mg/s)
	mass flux in river at SW-005	M_r5 =	4,264.4968 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	4,479.0419 (mg/s)
	mass flux into Colby Lake	M_cl =	5,112.4554 (mg/s)
	Low Flow		
	concentration in river at SW-001	C_r1 =	21.10458 (mg/L)
	concentration in river at SW-002	C_r2 =	20.18508 (mg/L)
	concentration in river at SW-003	C_r3 =	22.18325 (mg/L)
	concentration in river at SW-004	C_r4 =	28.18928 (mg/L)
	concentration in river at SW-004A	C_r4A =	33.06278 (mg/L)
	concentration in river at SW-005	C_r5 =	26.34321 (mg/L)
	concentration in river at USGS Gage	C_r6 =	25.56776 (mg/L)
	concentration in Colby Lake (H)	C_cl =	15.82681 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Post-Closure Thallium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0004 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0004 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0004 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0004 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0004 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0004 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0004 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0004 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0004 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0003 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	0.0002 (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0000 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0000 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0000 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0000 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0000 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0000 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0000 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0000 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.0000 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	0.0002 (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0000 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0000 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0000 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0000 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00002 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.00809 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.00003 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00001 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.00004 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.00000 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	0.00022 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.00016 (mg/s)
	mass flux of West Pit overflow	M_sms =	0.00045 (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.00026 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.00005 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.00013 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00441 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	0.0081 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.0081 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.0082 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.0084 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.0090 (mg/s)
	mass flux in river at SW-005	M_r5 =	0.0093 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	0.0093 (mg/s)
	mass flux into Colby Lake	M_cl =	0.0139 (mg/s)
	Low Flow		
	concentration in river at SW-001	C_r1 =	0.00024 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00020 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00018 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00015 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00009 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00006 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00005 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.00035 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Post-Closure Vanadium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0009 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0009 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0009 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0009 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0009 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0009 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0009 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0009 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0009 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0043 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	0.0571 (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0043 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0043 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0043 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0043 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0043 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0043 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0043 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0043 (mg/L)
	concentration of ground water seepage from East Pit	C_gcp =	0.0558 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	0.0571 (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.2858 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.4163 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.5495 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.0014 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.2858 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.4163 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.5495 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0017 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0043 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0043 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0043 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.02190 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.12169 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.03256 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.01297 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gcp_003 =	0.01760 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00024 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00005 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.03798 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gcp_004 =	0.01760 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	0.06481 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00005 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.16862 (mg/s)
	mass flux of West Pit overflow	M_sms =	0.13562 (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.05009 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.00181 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.27624 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.05719 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.14238 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00993 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	0.1438 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.1762 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.2070 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.3274 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.8636 (mg/s)
	mass flux in river at SW-005	M_r5 =	0.9598 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	1.0170 (mg/s)
	mass flux into Colby Lake	M_cl =	1.1693 (mg/s)
	Low Flow		
	concentration in river at SW-001	C_r1 =	0.00430 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00430 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00467 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00600 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00700 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00593 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00581 (mg/L)
	concentration in Colby Lake (H	C_cl =	0.00256 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Post-Closure Zinc		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0160 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0160 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0160 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0160 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0160 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0160 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0160 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0160 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0620 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0073 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	0.0389 (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0275 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0275 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0275 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0275 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0275 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0275 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0275 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0275 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.0285 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	0.0389 (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0900 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0900 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0900 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.0030 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0900 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0900 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0900 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0046 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0275 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0275 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0275 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	Low Flow		
	mass flux of surface water into SW-001	M_s1 =	- (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.14009 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.20744 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	- (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.20823 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	- (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.08292 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.00901 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00005 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	- (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.24289 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.00901 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	0.04424 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	- (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	1.07840 (mg/s)
	mass flux of West Pit overflow	M_sms =	0.09257 (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.01577 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.00388 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	- (mg/s)
	mass flux of ground water into SW-005	M_g5 =	1.76663 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	- (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.36578 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	- (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.91055 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.68429 (mg/s)
Mass balance at each node	Low Flow		
	mass flux in river at SW-001	M_r1 =	0.3475 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.5558 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.6477 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.9439 (mg/s)
	mass flux in river at SW-004A	M_r4A =	2.1345 (mg/s)
	mass flux in river at SW-005	M_r5 =	3.9011 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	4.2669 (mg/s)
	mass flux into Colby Lake	M_cl =	5.8618 (mg/s)
	Low Flow		
	concentration in river at SW-001	C_r1 =	0.01041 (mg/L)
	concentration in river at SW-002	C_r2 =	0.01357 (mg/L)
	concentration in river at SW-003	C_r3 =	0.01462 (mg/L)
	concentration in river at SW-004	C_r4 =	0.01729 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.02186 (mg/L)
	concentration in river at SW-005	C_r5 =	0.02410 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.02436 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.01796 (mg/L)

## Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

### FLOWS

Case Flow	Post-Closure Average Flow Conditions (mean annual)			
Total flow in Partridge River	flow in river at SW-001	Q_r1_M =	5.70	(cfs)
	flow in river at SW-002	Q_r2_M =	11.39	(cfs)
	flow in river at SW-003	Q_r3_M =	13.15	(cfs)
	flow in river at SW-004	Q_r4_M =	19.70	(cfs)
	flow in river at SW-004A	Q_r4a_M =	47.18	(cfs)
	flow in river at SW-005	Q_r5_M =	85.54	(cfs)
	flow in river at USGS Gage	Q_r6_M =	89.89	(cfs)
	total flow into Colby Lake	Q_cl_M =	115.01	(cfs)
	flow check	Q_ck_M =	115.01	(cfs)
input flow data	surface water flow into SW-001	Q_s1_M =	4.52	(cfs)
	surface water flow into SW-002	Q_s2_M =	5.42	(cfs)
	surface water flow into SW-003	Q_s3_M =	1.64	(cfs)
	surface water flow into SW-004	Q_s4_M =	6.19	(cfs)
	surface water flow into SW-004A	Q_s4a_M =	23.67	(cfs)
	surface water flow into SW-005	Q_s5_M =	36.09	(cfs)
	surface water flow into USGS Gage	Q_s6_M =	3.88	(cfs)
	surface water flow into Colby Lake	Q_scl_M =	23.56	(cfs)
	surface water inflow from Hoyt Lakes WWTP	Q_shl_M =	0.39	(cfs)
	surface water inflow from discharges upstream of PM-1	Q_sns_M =	1.00	(cfs)
	surface water flow from West Pit overflow	Q_sms_M =	2.36	(cfs)
	ground water flow into SW-001	Q_g1_M =	0.18	(cfs)
	ground water flow into SW-002	Q_g2_M =	0.27	(cfs)
	ground water flow into SW-003	Q_g3_M =	0.11	(cfs)
	ground water flow into SW-004	Q_g4_M =	0.31	(cfs)
	ground water flow into SW-004A	Q_g4a_M =	1.39	(cfs)
	ground water flow into SW-005	Q_g5_M =	2.27	(cfs)
	ground water flow into USGS Gage	Q_g6_M =	0.47	(cfs)
	ground water flow into Colby Lake	Q_gcl_M =	1.17	(cfs)
	ground water seepage from East Pit to SW-003	Q_gep_003_M =	0.0112	(cfs)
	ground water seepage from East Pit to SW-004	Q_gep_004_M =	0.0112	(cfs)
	ground water seepage from West Pit	Q_gwp_M =	0.04	(cfs)
	ground water liner leakage from Cat 1 stockpile	Q_gC12_M =	0.0085	(cfs)
	ground water liner leakage from Cat 2/3 stockpile to SW-003	Q_gC3_003_M =	0.0000	(cfs)
	ground water liner leakage from Cat 2/3 stockpile to SW-004	Q_gC3_004_M =	-	(cfs)
	ground water liner leakage from Cat 3LO stockpile to SW-003	Q_gC3LO_003_M =	0.0000	(cfs)
	ground water liner leakage from Cat 3LO stockpile to SW-004	Q_gC3LO_004_M =	0.0000	(cfs)
	ground water liner leakage from Cat 4 stockpile	Q_gC4_M =	-	(cfs)
	ground water liner leakage from LO SP	Q_gC4LO_M =	-	(cfs)
	ground water seepage from Overburden Storage	Q_gOS_M =	-	(cfs)
	ground water seepage from Overburden (Cat 1)	Q_gO12_M =	0.0628	(cfs)
	ground water liner leakage from Cat 1 sumps	Q_gC12s_M =	0.0000	(cfs)
	ground water liner leakage from Cat 2/3 sumps	Q_gC3s_M =	0.0000	(cfs)
	ground water liner leakage from Cat 3LO sumps	Q_gC3LOs_M =	0.0000	(cfs)
	ground water liner leakage from Cat 4 sumps	Q_gC4s_M =	-	(cfs)
	ground water liner leakage from LO SP sumps	Q_gC4LOs_M =	-	(cfs)
	ground water seepage from Overburden pond - PW1	Q_gOp1_M =	-	(cfs)
	ground water seepage from Overburden pond - PW7	Q_gOp7_M =	-	(cfs)
	ground water leakage from Haul Road pond - PW2	Q_gHRp2_M =	-	(cfs)
	ground water leakage from Haul Road pond - PW4	Q_gHRp4_M =	-	(cfs)
	ground water leakage from RTH pond - PW3	Q_gRTHp_M =	-	(cfs)
	ground water liner leakage from WWTF pond	Q_gWTFp_M =	-	(cfs)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Post-Closure Silver		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0001 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0001 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0001 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0001 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0001 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0001 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0001 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0001 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0001 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0001 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	0.0009 (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0006 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0006 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0006 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0006 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0006 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0006 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0006 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0006 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	0.0003 (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	0.0009 (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.0007 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.0007 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.0007 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.0007 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.0007 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.0007 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	- (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0006 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0006 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0006 (mg/L)
	concentration of liner leakage from WWTF pond	C gWTFp =	#N/A (mg/L)
Average Flow			
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	0.01279 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.00280 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.00340 (mg/s)
	mass flux of surface water into SW-002	M s2 =	0.01534 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.00416 (mg/s)
	mass flux of surface water into SW-003	M s3 =	0.00464 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.00166 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep 003 =	0.00009 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3 003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO 003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s 003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	0.01751 (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.00486 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep 004 =	0.00009 (mg/s)
	mass flux of seepage from West Pit	M gwp =	0.00097 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3 004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO 004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs 004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M s4A =	0.06699 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.02157 (mg/s)
	mass flux of West Pit overflow	M sms =	0.05688 (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	0.00017 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	0.10212 (mg/s)
	mass flux of ground water into SW-005	M g5 =	0.03533 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	0.01098 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.00732 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	0.06667 (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	0.01821 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.00110 (mg/s)
Average Flow			
Mass balance at each node	mass flux in river at SW-001	M r1 =	0.0190 (mg/s)
	mass flux in river at SW-002	M r2 =	0.0385 (mg/s)
	mass flux in river at SW-003	M r3 =	0.0449 (mg/s)
	mass flux in river at SW-004	M r4 =	0.0683 (mg/s)
	mass flux in river at SW-004A	M r4A =	0.2139 (mg/s)
	mass flux in river at SW-005	M r5 =	0.3514 (mg/s)
	mass flux in river at USGS Gage	M r6 =	0.3697 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M cl =	0.4557 (mg/s)
	concentration in river at SW-001	C r1 =	0.00012 (mg/L)
	concentration in river at SW-002	C r2 =	0.00012 (mg/L)
	concentration in river at SW-003	C r3 =	0.00012 (mg/L)
	concentration in river at SW-004	C r4 =	0.00012 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00016 (mg/L)
	concentration in river at SW-005	C r5 =	0.00015 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00015 (mg/L)
	concentration in Colby Lake	C cl =	0.00014 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Post-Closure Aluminum		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0700 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0700 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0700 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0700 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0700 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0700 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0700 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0700 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0700 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0173 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	0.0186 (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.1250 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.1250 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.1250 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.1250 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.1250 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.1250 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.1250 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.1250 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.0368 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	0.0186 (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	1.6800 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	1.6800 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	1.6800 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.1400 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	1.6800 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	1.6800 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	1.6800 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.4106 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.1250 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.1250 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.1250 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Average Flow			
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	8.95493 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.63675 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.48959 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	10.73662 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.94651 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	3.24975 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.37689 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.01161 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00192 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00030 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	12.25496 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	1.10403 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.01161 (mg/s)
	mass flux of ground water into SW-004	M_gwp =	0.02109 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00030 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	46.89266 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	4.90183 (mg/s)
	mass flux of West Pit overflow	M_sms =	1.24025 (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.40448 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00004 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.24865 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	71.48702 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	8.03013 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	7.68505 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	1.66263 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	46.67236 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	4.13888 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.77259 (mg/s)
Average Flow			
Mass balance at each node	mass flux in river at SW-001	M_r1 =	10.0813 (mg/s)
	mass flux in river at SW-002	M_r2 =	21.7644 (mg/s)
	mass flux in river at SW-003	M_r3 =	25.4049 (mg/s)
	mass flux in river at SW-004	M_r4 =	38.7969 (mg/s)
	mass flux in river at SW-004A	M_r4A =	92.4848 (mg/s)
	mass flux in river at SW-005	M_r5 =	172.0020 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	181.3496 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	232.9334 (mg/s)
	concentration in river at SW-001	C_r1 =	0.06249 (mg/L)
	concentration in river at SW-002	C_r2 =	0.06753 (mg/L)
	concentration in river at SW-003	C_r3 =	0.06829 (mg/L)
	concentration in river at SW-004	C_r4 =	0.06961 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.06926 (mg/L)
	concentration in river at SW-005	C_r5 =	0.07105 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.07129 (mg/L)
	concentration in Colby Lake	C_cl =	0.07157 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Post-Closure Arsenic		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0021 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0021 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0021 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0021 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0021 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0021 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0021 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0021 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0021 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0065 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	0.0964 (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0022 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0022 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0022 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0022 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0022 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0022 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0022 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0022 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.0148 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	0.0964 (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.2237 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.3258 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.4300 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.0027 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.2237 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.3258 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.4300 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0016 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0022 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0022 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0022 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Average Flow			
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	0.26993 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.01100 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.18395 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	0.32363 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.01636 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.09796 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00651 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.00466 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00037 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00008 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.36940 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.01908 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.00466 (mg/s)
	mass flux of ground water into West Pit	M_gwp =	0.10946 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00008 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	1.41348 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.08470 (mg/s)
	mass flux of West Pit overflow	M_sms =	6.43545 (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.05385 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.00480 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	2.15482 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.13876 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.23165 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.02873 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	1.40684 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.07152 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.02329 (mg/s)
Average Flow			
Mass balance at each node	mass flux in river at SW-001	M_r1 =	0.4649 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.8049 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.9144 (mg/s)
	mass flux in river at SW-004	M_r4 =	1.4171 (mg/s)
	mass flux in river at SW-004A	M_r4A =	9.4094 (mg/s)
	mass flux in river at SW-005	M_r5 =	11.7030 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	11.9634 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	13.4650 (mg/s)
	concentration in river at SW-001	C_r1 =	0.00288 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00250 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00246 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00254 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00705 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00483 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00470 (mg/L)
	concentration in Colby Lake	C_cl =	0.00414 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Post-Closure Boron		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0450 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0450 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0450 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0450 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0450 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0450 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0450 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0450 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0450 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0960 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	0.3357 (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0870 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0870 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0870 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0870 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0870 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0870 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0870 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0870 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	0.3666 (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	0.3357 (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.7600 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.7600 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.7600 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.0370 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.7600 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.7600 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.7600 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0622 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0870 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0870 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0870 (mg/L)
	concentration of liner leakage from WWTF ponc	C gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	Average Flow		
	mass flux of surface water into SW-001	M s1 =	5.75674 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.44318 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	2.71680 (mg/s)
	mass flux of surface water into SW-002	M s2 =	6.90211 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.65877 (mg/s)
	mass flux of surface water into SW-003	M s3 =	2.08912 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.26232 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	0.11568 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.00087 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00014 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	7.87819 (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.76841 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	0.11568 (mg/s)
	mass flux of seepage from West Pit	M gwp =	0.38136 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00014 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M s4A =	30.14528 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	3.41167 (mg/s)
	mass flux of West Pit overflow	M sms =	22.42151 (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	0.18298 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00002 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	0.06572 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	45.95594 (mg/s)
	mass flux of ground water into SW-005	M g5 =	5.58897 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	4.94039 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	1.15719 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	30.00366 (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	2.88066 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.49667 (mg/s)
Mass balance at each node	Average Flow		
	mass flux in river at SW-001	M r1 =	8.9167 (mg/s)
	mass flux in river at SW-002	M r2 =	16.4776 (mg/s)
	mass flux in river at SW-003	M r3 =	18.9457 (mg/s)
	mass flux in river at SW-004	M r4 =	28.0895 (mg/s)
	mass flux in river at SW-004A	M r4A =	84.3167 (mg/s)
	mass flux in river at SW-005	M r5 =	135.8616 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M r6 =	141.9592 (mg/s)
	mass flux into Colby Lake	M cl =	175.3402 (mg/s)
	Average Flow		
	concentration in river at SW-001	C r1 =	0.05527 (mg/L)
	concentration in river at SW-002	C r2 =	0.05113 (mg/L)
	concentration in river at SW-003	C r3 =	0.05093 (mg/L)
	concentration in river at SW-004	C r4 =	0.05040 (mg/L)
	concentration in river at SW-004A	C r4A =	0.06314 (mg/L)
	concentration in river at SW-005	C r5 =	0.05612 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.05580 (mg/L)
	concentration in Colby Lake	C cl =	0.05387 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Post-Closure Barium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0077 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0077 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0077 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0077 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0077 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0077 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0077 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0077 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0077 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0050 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	0.0840 (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0219 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0219 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0219 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0219 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0219 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0219 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0219 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0219 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.0400 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	0.0840 (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.1900 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.1900 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.1900 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.0140 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.1900 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.1900 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.1900 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0168 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0219 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0219 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0219 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Average Flow			
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	0.98248 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.11166 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.14150 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	1.17796 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.16598 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.35654 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.06609 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.01262 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00022 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00003 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	1.34454 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.19360 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.01262 (mg/s)
	mass flux of ground water into SW-004	M_gwp =	0.09538 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00003 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	5.14479 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.85959 (mg/s)
	mass flux of West Pit overflow	M_sms =	5.60783 (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.04574 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.02487 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	7.84315 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	1.40816 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.84316 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.29156 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	5.12062 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.72579 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.08476 (mg/s)
Average Flow			
Mass balance at each node	mass flux in river at SW-001	M_r1 =	1.2358 (mg/s)
	mass flux in river at SW-002	M_r2 =	2.5706 (mg/s)
	mass flux in river at SW-003	M_r3 =	3.0151 (mg/s)
	mass flux in river at SW-004	M_r4 =	4.6613 (mg/s)
	mass flux in river at SW-004A	M_r4A =	16.3441 (mg/s)
	mass flux in river at SW-005	M_r5 =	25.5954 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	26.7301 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	32.6613 (mg/s)
	concentration in river at SW-001	C_r1 =	0.00766 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00800 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00810 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00836 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.01224 (mg/L)
	concentration in river at SW-005	C_r5 =	0.01057 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.01051 (mg/L)
	concentration in Colby Lake	C_cl =	0.01003 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Post-Closure Beryllium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0001 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0001 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0001 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0001 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0001 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0001 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0001 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0001 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0001 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0001 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	0.0007 (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0001 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0001 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0001 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0001 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0001 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0001 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0001 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0001 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.0001 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	0.0007 (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0002 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0002 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	- (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0001 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0001 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0001 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Average Flow			
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	0.01279 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00074 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.00283 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	0.01534 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.00110 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.00464 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00044 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.00003 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.01751 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.00128 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.00003 (mg/s)
	mass flux of ground water into West Pit	M_gwp =	0.00079 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	0.06699 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.00569 (mg/s)
	mass flux of West Pit overflow	M_sms =	0.04660 (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.00005 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	0.10212 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.00931 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.01098 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.00193 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	0.06667 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.00480 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00110 (mg/s)
Average Flow			
Mass balance at each node	mass flux in river at SW-001	M_r1 =	0.0164 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.0328 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.0379 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.0575 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.1768 (mg/s)
	mass flux in river at SW-005	M_r5 =	0.2883 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	0.3012 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	0.3738 (mg/s)
	concentration in river at SW-001	C_r1 =	0.00010 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00010 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00010 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00010 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00013 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00012 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00012 (mg/L)
	concentration in Colby Lake	C_cl =	0.00011 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Post-Closure Calcium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	17.0000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	17.0000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	17.0000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	17.0000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	17.0000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	17.0000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	17.0000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	17.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	17.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	24.5000 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	120.0102 (mg/L)
	concentration of ground water into SW-001	C_g1 =	14.7900 (mg/L)
	concentration of ground water into SW-002	C_g2 =	14.7900 (mg/L)
	concentration of ground water into SW-003	C_g3 =	14.7900 (mg/L)
	concentration of ground water into SW-004	C_g4 =	14.7900 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	14.7900 (mg/L)
	concentration of ground water into SW-005	C_g5 =	14.7900 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	14.7900 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	14.7900 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	144.8617 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	120.0102 (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	540.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	540.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	540.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	15.8000 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	540.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	540.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	540.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	9.3700 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	14.7900 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	14.7900 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	14.7900 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Average Flow			
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	2,174.76906 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	75.34026 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	693.35000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	2,607.46446 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	111.99140 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	789.22425 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	44.59378 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	45.71039 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.61824 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.09800 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00044 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	2,976.20551 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	130.62927 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	45.71039 (mg/s)
	mass flux of ground water into West Pit	M_gwp =	136.32707 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.09800 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00042 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	11,388.21716 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	579.98463 (mg/s)
	mass flux of West Pit overflow	M_sms =	8,015.24354 (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	130.01168 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.01183 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	28.06213 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	17,361.13359 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	950.12439 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	1,866.36871 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	196.72179 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	11,334.71600 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	489.71169 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	187.62900 (mg/s)
Average Flow			
Mass balance at each node	mass flux in river at SW-001	M_r1 =	2,943.4593 (mg/s)
	mass flux in river at SW-002	M_r2 =	5,662.9162 (mg/s)
	mass flux in river at SW-003	M_r3 =	6,543.1603 (mg/s)
	mass flux in river at SW-004	M_r4 =	9,832.1309 (mg/s)
	mass flux in river at SW-004A	M_r4A =	29,973.6619 (mg/s)
	mass flux in river at SW-005	M_r5 =	48,284.9199 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	50,348.0104 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	62,360.0671 (mg/s)
	concentration in river at SW-001	C_r1 =	18.24591 (mg/L)
	concentration in river at SW-002	C_r2 =	17.57174 (mg/L)
	concentration in river at SW-003	C_r3 =	17.58768 (mg/L)
	concentration in river at SW-004	C_r4 =	17.63972 (mg/L)
	concentration in river at SW-004A	C_r4A =	22.44713 (mg/L)
	concentration in river at SW-005	C_r5 =	19.94598 (mg/L)
	concentration in river at USGS Gage	C_r6 =	19.79188 (mg/L)
	concentration in Colby Lake	C_cl =	19.15960 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Post-Closure Cadmium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0001 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0001 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0001 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0001 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0001 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0001 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0001 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0001 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0001 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0001 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	0.0002 (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0001 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0001 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0001 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0001 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0001 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0001 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0001 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0001 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.0002 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	0.0002 (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0002 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0002 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0001 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0001 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0001 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0001 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Average Flow			
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	0.01279 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00051 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.00283 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	0.01534 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.00076 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.00464 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00030 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.00006 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.01751 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.00088 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.00006 (mg/s)
	mass flux of ground water into SW-004	M_gwp =	0.00026 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	0.06699 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.00392 (mg/s)
	mass flux of West Pit overflow	M_sms =	0.01505 (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.00004 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	0.10212 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.00642 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.01098 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.00133 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	0.06667 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.00331 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00110 (mg/s)
Average Flow			
Mass balance at each node	mass flux in river at SW-001	M_r1 =	0.0161 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.0322 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.0372 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.0559 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.1419 (mg/s)
	mass flux in river at SW-005	M_r5 =	0.2505 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	0.2628 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	0.3339 (mg/s)
	concentration in river at SW-001	C_r1 =	0.00010 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00010 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00010 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00010 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00011 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00010 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00010 (mg/L)
	concentration in Colby Lake	C_cl =	0.00010 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Post-Closure Chloride		
Input concentration data	concentration of surface water into SW-001	C_s1 =	8.0000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	8.0000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	8.0000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	8.0000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	8.0000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	8.0000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	8.0000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	8.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	8.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	1.6000 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	48.0538 (mg/L)
	concentration of ground water into SW-001	C_g1 =	6.6000 (mg/L)
	concentration of ground water into SW-002	C_g2 =	6.6000 (mg/L)
	concentration of ground water into SW-003	C_g3 =	6.6000 (mg/L)
	concentration of ground water into SW-004	C_g4 =	6.6000 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	6.6000 (mg/L)
	concentration of ground water into SW-005	C_g5 =	6.6000 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	6.6000 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	6.6000 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	107.8797 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	48.0538 (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	- (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	- (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	- (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	2.3300 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	- (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	- (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	- (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	5.3500 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	6.6000 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	6.6000 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	6.6000 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Average Flow			
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	1,023.42074 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	33.62040 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	45.28000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	1,227.04210 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	49.97588 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	371.39965 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	19.89986 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	34.04089 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	- (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	- (mg/s)
	mass flux of surface water into SW-004	M_s4 =	1,400.56730 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	58.29298 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	34.04089 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	54.58728 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	- (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	- (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	5,359.16102 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	258.81667 (mg/s)
	mass flux of West Pit overflow	M_sms =	3,209.41638 (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	- (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	4.13828 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	8,169.94522 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	423.99060 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	878.29116 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	87.78660 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	5,333.98400 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	218.53260 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	88.29600 (mg/s)
Average Flow			
Mass balance at each node	mass flux in river at SW-001	M_r1 =	1,102.3211 (mg/s)
	mass flux in river at SW-002	M_r2 =	2,379.3391 (mg/s)
	mass flux in river at SW-003	M_r3 =	2,804.6795 (mg/s)
	mass flux in river at SW-004	M_r4 =	4,352.1680 (mg/s)
	mass flux in river at SW-004A	M_r4A =	13,183.7003 (mg/s)
	mass flux in river at SW-005	M_r5 =	21,777.6361 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	22,743.7139 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	28,384.5265 (mg/s)
	concentration in river at SW-001	C_r1 =	6.83307 (mg/L)
	concentration in river at SW-002	C_r2 =	7.38297 (mg/L)
	concentration in river at SW-003	C_r3 =	7.53883 (mg/L)
	concentration in river at SW-004	C_r4 =	7.80818 (mg/L)
	concentration in river at SW-004A	C_r4A =	9.87321 (mg/L)
	concentration in river at SW-005	C_r5 =	8.99611 (mg/L)
	concentration in river at USGS Gage	C_r6 =	8.94059 (mg/L)
	concentration in Colby Lake	C_cl =	8.72091 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Post-Closure Cobalt		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0005 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0005 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0005 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0005 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0005 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0005 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0005 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0005 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0005 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0005 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	0.0048 (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0017 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0017 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0017 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0017 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0017 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0017 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0017 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0017 (mg/L)
	concentration of ground water seepage from East Pit	C_gcp =	0.0001 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	0.0048 (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0339 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0493 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0520 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.0013 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0339 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0493 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0520 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0011 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0017 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0017 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0017 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Average Flow			
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	0.06396 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00841 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.01415 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	0.07669 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.01249 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.02321 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00497 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gcp_003 =	0.00002 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00006 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.08754 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.01457 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gcp_004 =	0.00002 (mg/s)
	mass flux of ground water into SW-004	M_gwp =	0.00550 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	0.33495 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.06470 (mg/s)
	mass flux of West Pit overflow	M_sms =	0.32344 (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.00816 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.00231 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	0.51062 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.10600 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.05489 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.02195 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	0.33337 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.05463 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00552 (mg/s)
Average Flow			
Mass balance at each node	mass flux in river at SW-001	M_r1 =	0.0865 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.1757 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.2040 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.3116 (mg/s)
	mass flux in river at SW-004A	M_r4A =	1.0452 (mg/s)
	mass flux in river at SW-005	M_r5 =	1.6618 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	1.7386 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	2.1322 (mg/s)
	concentration in river at SW-001	C_r1 =	0.00054 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00055 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00055 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00056 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00078 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00069 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00068 (mg/L)
	concentration in Colby Lake	C_cl =	0.00066 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Post-Closure Copper		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0017 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0017 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0017 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0017 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0017 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0017 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0017 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0017 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0190 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0012 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	0.0060 (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0030 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0030 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0030 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0030 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0030 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0030 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0030 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0030 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.0014 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	0.0060 (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0920 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0920 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0920 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.0170 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0920 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0920 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0920 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0214 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0030 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0030 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0030 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	0.21748 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.01503 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.03509 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	0.26075 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.02234 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.07892 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00889 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.00043 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00011 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00002 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.29762 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.02606 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.00043 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	0.00682 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00002 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	1.13882 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.11568 (mg/s)
	mass flux of West Pit overflow	M_sms =	0.40073 (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.02215 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.03019 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	1.73611 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.18951 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.18664 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.03924 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	1.13347 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.09768 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.20970 (mg/s)
Mass balance at each node	Average Flow		
	mass flux in river at SW-001	M_r1 =	0.2676 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.5507 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.6391 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.9700 (mg/s)
	mass flux in river at SW-004A	M_r4A =	2.6776 (mg/s)
	mass flux in river at SW-005	M_r5 =	4.6032 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	4.8291 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	6.2699 (mg/s)
	Average Flow		
	concentration in river at SW-001	C_r1 =	0.00166 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00171 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00172 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00174 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00201 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00190 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00190 (mg/L)
	concentration in Colby Lake	C_cl =	0.00193 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Post-Closure Fluoride		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0700 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0700 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0700 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0700 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0700 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0700 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0700 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0700 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0700 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.1400 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	0.4494 (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.2800 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.2800 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.2800 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.2800 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.2800 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.2800 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.2800 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.2800 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.5275 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	0.4494 (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0621 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0621 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0621 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.4200 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0621 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0621 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0621 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.2239 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.2800 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.2800 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.2800 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Average Flow			
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	8.95493 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	1.42632 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	3.96200 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	10.73662 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	2.12019 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	3.24975 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.84424 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.16646 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00007 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	12.25496 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	2.47304 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.16646 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	0.51052 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	46.89266 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	10.98010 (mg/s)
	mass flux of West Pit overflow	M_sms =	30.01560 (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.01495 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.74596 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	71.48702 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	17.98748 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	7.68505 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	3.72428 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	46.67236 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	9.27108 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.77259 (mg/s)
Average Flow			
Mass balance at each node	mass flux in river at SW-001	M_r1 =	14.3433 (mg/s)
	mass flux in river at SW-002	M_r2 =	27.2001 (mg/s)
	mass flux in river at SW-003	M_r3 =	31.4606 (mg/s)
	mass flux in river at SW-004	M_r4 =	46.8656 (mg/s)
	mass flux in river at SW-004A	M_r4A =	135.5148 (mg/s)
	mass flux in river at SW-005	M_r5 =	224.9894 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	236.3957 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	293.1147 (mg/s)
	Average Flow		
	concentration in river at SW-001	C_r1 =	0.08891 (mg/L)
	concentration in river at SW-002	C_r2 =	0.08440 (mg/L)
	concentration in river at SW-003	C_r3 =	0.08456 (mg/L)
	concentration in river at SW-004	C_r4 =	0.08408 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.10149 (mg/L)
	concentration in river at SW-005	C_r5 =	0.09294 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.09293 (mg/L)
	concentration in Colby Lake	C_cl =	0.09006 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case	Post-Closure			
Parameter	Iron			
Input concentration data	concentration of surface water into SW-001	C s1 =	1.6000 (mg/L)	
	concentration of surface water into SW-002	C s2 =	1.6000 (mg/L)	
	concentration of surface water into SW-003	C s3 =	1.6000 (mg/L)	
	concentration of surface water into SW-004	C s4 =	1.6000 (mg/L)	
	concentration of surface water into SW-004A	C s4A =	1.6000 (mg/L)	
	concentration of surface water into SW-005	C s5 =	1.6000 (mg/L)	
	concentration of surface water into USGS Gage	C s6 =	1.6000 (mg/L)	
	concentration of surface water into Colby Lake	C scl =	1.6000 (mg/L)	
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	1.6000 (mg/L)	
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0300 (mg/L)	
	concentration of surface water flow from West Pit overflow	C sms =	0.1000 (mg/L)	
	concentration of ground water into SW-001	C g1 =	2.8440 (mg/L)	
	concentration of ground water into SW-002	C g2 =	2.8440 (mg/L)	
	concentration of ground water into SW-003	C g3 =	2.8440 (mg/L)	
	concentration of ground water into SW-004	C g4 =	2.8440 (mg/L)	
	concentration of ground water into SW-004A	C g4A =	2.8440 (mg/L)	
	concentration of ground water into SW-005	C g5 =	2.8440 (mg/L)	
	concentration of ground water into USGS Gage	C g6 =	2.8440 (mg/L)	
	concentration of ground water into Colby Lake	C gcl =	2.8440 (mg/L)	
	concentration of ground water seepage from East Pit	C gep =	0.5398 (mg/L)	
	concentration of ground water seepage from West Pit	C gwp =	0.1000 (mg/L)	
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.8100 (mg/L)	
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.8100 (mg/L)	
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.8100 (mg/L)	
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	#N/A (mg/L)	
	concentration of liner leakage from LOSP	C gC4LO =	#N/A (mg/L)	
	concentration of seepage from Overburden (Storage)	C gOS =	#N/A (mg/L)	
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.1500 (mg/L)	
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.8100 (mg/L)	
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.8100 (mg/L)	
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.8100 (mg/L)	
	concentration of liner leakage from Cat 4 sumps	C gC4s =	#N/A (mg/L)	
	concentration of liner leakage from LOSP sumps	C gC4LOs =	#N/A (mg/L)	
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.2255 (mg/L)	
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)	
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	2.8440 (mg/L)	
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	2.8440 (mg/L)	
	concentration of leakage from RTH Pond - PW3	C gRTHp =	2.8440 (mg/L)	
	concentration of liner leakage from WWTF ponc	C gWTFp =	#N/A (mg/L)	
			Average Flow	
	Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	204.68415 (mg/s)
		mass flux of ground water into SW-001	M g1 =	14.48734 (mg/s)
		mass flux of surface discharges from upstream of PM-1	M sns =	0.84900 (mg/s)
mass flux of surface water into SW-002		M s2 =	245.40842 (mg/s)	
mass flux of ground water into SW-002		M g2 =	21.53506 (mg/s)	
mass flux of surface water into SW-003		M s3 =	74.27993 (mg/s)	
mass flux of ground water into SW-003		M g3 =	8.57503 (mg/s)	
mass flux of seepage from East Pit to SW-003		M gep 003 =	0.17034 (mg/s)	
mass flux of liner leakage from Cat 2/3 stockpile to SW-003		M gC3 003 =	0.00093 (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-003		M gC3LO 003 =	0.00015 (mg/s)	
mass flux of liner leakage from Cat 2/3 sumps to SW-003		M gC3s 003 =	0.00000 (mg/s)	
mass flux of surface water into SW-004		M s4 =	280.11346 (mg/s)	
mass flux of ground water into SW-004		M g4 =	25.11897 (mg/s)	
mass flux of seepage from East Pit to SW-004		M gep 004 =	0.17034 (mg/s)	
mass flux of seepage from West Pit		M gwp =	0.11360 (mg/s)	
mass flux of liner leakage from Cat 2/3 stockpile to SW-004		M gC3 004 =	- (mg/s)	
mass flux of liner leakage from Cat 3LO stockpile to SW-004		M gC3LO 004 =	0.00015 (mg/s)	
mass flux of liner leakage from Cat 4 stockpile		M gC4 =	#N/A (mg/s)	
mass flux of liner leakage from LOSP		M gC4LO =	#N/A (mg/s)	
mass flux of seepage from Overburden (Storage)		M gOS =	#N/A (mg/s)	
mass flux of liner leakage from Cat 3LO sumps to SW-004		M gC3LOs 004 =	0.00000 (mg/s)	
mass flux of liner leakage from Cat 4 sumps		M gC4s =	#N/A (mg/s)	
mass flux of liner leakage from LOSP sumps		M gC4LOs =	#N/A (mg/s)	
mass flux of seepage from Overburden Ponds - PW1		M gOp1 =	- (mg/s)	
mass flux of leakage from Haul Road Pond - PW2		M gHRp2 =	- (mg/s)	
mass flux of leakage from Haul Road Pond - PW4		M gHRp4 =	- (mg/s)	
mass flux of leakage from RTH Pond - PW3		M gRTHp =	- (mg/s)	
mass flux of liner leakage from WWTF pond		M gWTFp =	#N/A (mg/s)	
mass flux of surface water into SW-004A		M s4A =	1,071.83220 (mg/s)	
mass flux of ground water into SW-004A		M g4A =	111.52646 (mg/s)	
mass flux of West Pit overflow		M sms =	6.67880 (mg/s)	
mass flux of liner leakage from Cat 1 stockpile		M gC12 =	0.19502 (mg/s)	
mass flux of liner leakage from Cat 1 sumps		M gC12s =	0.00002 (mg/s)	
mass flux of seepage from Overburden (Cat 1)		M gO12 =	0.26641 (mg/s)	
mass flux of seepage from Overburden Pond - PW7		M gOp7 =	#N/A (mg/s)	
mass flux of surface water into SW-005		M s5 =	1,633.98904 (mg/s)	
mass flux of ground water into SW-005		M g5 =	182.70140 (mg/s)	
mass flux of surface water into USGS Gage		M s6 =	175.65823 (mg/s)	
mass flux of ground water into USGS Gage		M g6 =	37.82804 (mg/s)	
mass flux of surface water into Colby Lake		M scl =	1,066.79680 (mg/s)	
mass flux of ground water into Colby Lake		M gcl =	94.16768 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP		M shl =	17.65920 (mg/s)	
		Average Flow		
Mass balance at each node	mass flux in river at SW-001	M r1 =	220.0205 (mg/s)	
	mass flux in river at SW-002	M r2 =	486.9640 (mg/s)	
	mass flux in river at SW-003	M r3 =	569.9903 (mg/s)	
	mass flux in river at SW-004	M r4 =	875.5069 (mg/s)	
	mass flux in river at SW-004A	M r4A =	2,066.0058 (mg/s)	
	mass flux in river at SW-005	M r5 =	3,882.6962 (mg/s)	
	mass flux in river at USGS Gage	M r6 =	4,096.1825 (mg/s)	
mass flux into Colby Lake	M cl =	5,274.8062 (mg/s)		
		Average Flow		
Convert mass flux to concentration	concentration in river at SW-001	C r1 =	1.36386 (mg/L)	
	concentration in river at SW-002	C r2 =	1.51102 (mg/L)	
	concentration in river at SW-003	C r3 =	1.53210 (mg/L)	
	concentration in river at SW-004	C r4 =	1.57074 (mg/L)	
	concentration in river at SW-004A	C r4A =	1.54722 (mg/L)	
	concentration in river at SW-005	C r5 =	1.60390 (mg/L)	
	concentration in river at USGS Gage	C r6 =	1.61022 (mg/L)	
	concentration in Colby Lake	C cl =	1.62064 (mg/L)	

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Post-Closure Hardness		
Input concentration data	concentration of surface water into SW-001	C_s1 =	110.0000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	110.0000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	110.0000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	110.0000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	110.0000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	110.0000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	110.0000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	110.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	110.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	110.0000 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	407.4929 (mg/L)
	concentration of ground water into SW-001	C_g1 =	66.4200 (mg/L)
	concentration of ground water into SW-002	C_g2 =	66.4200 (mg/L)
	concentration of ground water into SW-003	C_g3 =	66.4200 (mg/L)
	concentration of ground water into SW-004	C_g4 =	66.4200 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	66.4200 (mg/L)
	concentration of ground water into SW-005	C_g5 =	66.4200 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	66.4200 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	66.4200 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	503.5996 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	407.4929 (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	1,729.3495 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	1,729.3495 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	1,729.3495 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	71.5000 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	1,729.3495 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	1,729.3495 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	1,729.3495 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	43.5200 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	66.4200 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	66.4200 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	66.4200 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Average Flow			
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	14,072.03511 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	338.34348 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	3,113.00000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	16,871.82888 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	502.93907 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	5,106.74517 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	200.26497 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	158.90833 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	1.97991 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.31383 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00139 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	19,257.80034 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	586.63934 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	158.90833 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	462.89644 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.31383 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00133 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	73,688.46397 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	2,604.63688 (mg/s)
	mass flux of West Pit overflow	M_sms =	27,215.63514 (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	416.36226 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.03789 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	126.99004 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	112,336.74676 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	4,266.88722 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	12,076.50345 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	883.45242 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	73,342.28000 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	2,199.23262 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	1,214.07000 (mg/s)
Average Flow			
Mass balance at each node	mass flux in river at SW-001	M_r1 =	17,523.3786 (mg/s)
	mass flux in river at SW-002	M_r2 =	34,898.1465 (mg/s)
	mass flux in river at SW-003	M_r3 =	40,366.3601 (mg/s)
	mass flux in river at SW-004	M_r4 =	60,832.9198 (mg/s)
	mass flux in river at SW-004A	M_r4A =	164,885.0459 (mg/s)
	mass flux in river at SW-005	M_r5 =	281,488.8799 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	294,448.6358 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	371,204.2184 (mg/s)
	Average Flow		
	concentration in river at SW-001	C_r1 =	108.62389 (mg/L)
	concentration in river at SW-002	C_r2 =	108.28721 (mg/L)
	concentration in river at SW-003	C_r3 =	108.50270 (mg/L)
	concentration in river at SW-004	C_r4 =	109.13970 (mg/L)
	concentration in river at SW-004A	C_r4A =	123.48161 (mg/L)
	concentration in river at SW-005	C_r5 =	116.27994 (mg/L)
	concentration in river at USGS Gage	C_r6 =	115.74821 (mg/L)
	concentration in Colby Lake	C_cl =	114.04936 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Post-Closure Potassium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	1.3000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	1.3000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	1.3000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	1.3000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	1.3000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	1.3000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	1.3000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	1.3000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	1.3000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	2.7000 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	20.6395 (mg/L)
	concentration of ground water into SW-001	C_g1 =	1.7500 (mg/L)
	concentration of ground water into SW-002	C_g2 =	1.7500 (mg/L)
	concentration of ground water into SW-003	C_g3 =	1.7500 (mg/L)
	concentration of ground water into SW-004	C_g4 =	1.7500 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	1.7500 (mg/L)
	concentration of ground water into SW-005	C_g5 =	1.7500 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	1.7500 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	1.7500 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	25.3104 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	20.6395 (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	49.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	49.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	49.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	4.4500 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	49.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	49.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	49.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	2.2600 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	1.7500 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	1.7500 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	1.7500 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Average Flow			
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	166.30587 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	8.91450 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	76.41000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	199.39434 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	13.25118 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	60.35244 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	5.27648 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	7.98658 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.05610 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00889 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00004 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	227.59219 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	15.45647 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	7.98658 (mg/s)
	mass flux of ground water into West Pit	M_gwp =	23.44574 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00889 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00004 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	870.86367 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	68.62563 (mg/s)
	mass flux of West Pit overflow	M_sms =	1,378.47417 (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	11.79736 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00107 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	7.90358 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	1,327.61610 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	112.42175 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	142.72231 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	23.27675 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	866.77240 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	57.94425 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	14.34810 (mg/s)
Average Flow			
Mass balance at each node	mass flux in river at SW-001	M_r1 =	251.6304 (mg/s)
	mass flux in river at SW-002	M_r2 =	464.2759 (mg/s)
	mass flux in river at SW-003	M_r3 =	537.9564 (mg/s)
	mass flux in river at SW-004	M_r4 =	812.4463 (mg/s)
	mass flux in river at SW-004A	M_r4A =	3,150.1118 (mg/s)
	mass flux in river at SW-005	M_r5 =	4,590.1497 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	4,756.1487 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	5,695.2135 (mg/s)
	concentration in river at SW-001	C_r1 =	1.55981 (mg/L)
	concentration in river at SW-002	C_r2 =	1.44062 (mg/L)
	concentration in river at SW-003	C_r3 =	1.44600 (mg/L)
	concentration in river at SW-004	C_r4 =	1.45760 (mg/L)
	concentration in river at SW-004A	C_r4A =	2.35910 (mg/L)
	concentration in river at SW-005	C_r5 =	1.89614 (mg/L)
	concentration in river at USGS Gage	C_r6 =	1.86965 (mg/L)
	concentration in Colby Lake	C_cl =	1.74981 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case	Post-Closure		
Parameter	Magnesium		
Input concentration data	concentration of surface water into SW-001	C s1 =	8.0000 (mg/L)
	concentration of surface water into SW-002	C s2 =	8.0000 (mg/L)
	concentration of surface water into SW-003	C s3 =	8.0000 (mg/L)
	concentration of surface water into SW-004	C s4 =	8.0000 (mg/L)
	concentration of surface water into SW-004A	C s4A =	8.0000 (mg/L)
	concentration of surface water into SW-005	C s5 =	8.0000 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	8.0000 (mg/L)
	concentration of surface water into Colby Lake	C scl =	8.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	8.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	10.5000 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	26.2964 (mg/L)
	concentration of ground water into SW-001	C g1 =	8.0200 (mg/L)
	concentration of ground water into SW-002	C g2 =	8.0200 (mg/L)
	concentration of ground water into SW-003	C g3 =	8.0200 (mg/L)
	concentration of ground water into SW-004	C g4 =	8.0200 (mg/L)
	concentration of ground water into SW-004A	C g4A =	8.0200 (mg/L)
	concentration of ground water into SW-005	C g5 =	8.0200 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	8.0200 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	8.0200 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	31.7386 (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	26.2964 (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	93.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	93.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	93.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	9.0100 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	93.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	93.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	93.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	4.8800 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	8.0200 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	8.0200 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	8.0200 (mg/L)
	concentration of liner leakage from WWTF pond	C gWTFp =	#N/A (mg/L)

		Average Flow
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 = 1,023.42074 (mg/s)
	mass flux of ground water into SW-001	M g1 = 40.85388 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns = 297.15000 (mg/s)
	mass flux of surface water into SW-002	M s2 = 1,227.04210 (mg/s)
	mass flux of ground water into SW-002	M g2 = 60.72826 (mg/s)
	mass flux of surface water into SW-003	M s3 = 371.39965 (mg/s)
	mass flux of ground water into SW-003	M g3 = 24.18135 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep 003 = 10.01497 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3 003 = 0.10647 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO 00 = 0.01688 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s 003 = 0.00007 (mg/s)
	mass flux of surface water into SW-004	M s4 = 1,400.56730 (mg/s)
	mass flux of ground water into SW-004	M g4 = 70.83480 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep 004 = 10.01497 (mg/s)
	mass flux of seepage from West Pit	M gwp = 29.87167 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3 004 = - (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO 00 = 0.01688 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 = #N/A (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO = #N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS = #N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs 0 = 0.00007 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s = #N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs = #N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 = - (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 = - (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 = - (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp = - (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp = #N/A (mg/s)
	mass flux of surface water into SW-004A	M s4A = 5,359.16102 (mg/s)
	mass flux of ground water into SW-004A	M g4A = 314.50147 (mg/s)
	mass flux of West Pit overflow	M sms = 1,756.28168 (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 = 22.39090 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s = 0.00204 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 = 16.00252 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 = #N/A (mg/s)
	mass flux of surface water into SW-005	M s5 = 8,169.94522 (mg/s)
	mass flux of ground water into SW-005	M g5 = 515.21282 (mg/s)
	mass flux of surface water into USGS Gage	M s6 = 878.29116 (mg/s)
	mass flux of ground water into USGS Gage	M g6 = 106.67402 (mg/s)
	mass flux of surface water into Colby Lake	M scl = 5,333.98400 (mg/s)
	mass flux of ground water into Colby Lake	M gcl = 265.55022 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl = 88.29600 (mg/s)
		Average Flow
Mass balance at each node	mass flux in river at SW-001	M r1 = 1,361.4248 (mg/s)
	mass flux in river at SW-002	M r2 = 2,649.1950 (mg/s)
	mass flux in river at SW-003	M r3 = 3,054.9144 (mg/s)
	mass flux in river at SW-004	M r4 = 4,566.2201 (mg/s)
	mass flux in river at SW-004A	M r4A = 12,034.5597 (mg/s)
	mass flux in river at SW-005	M r5 = 20,719.7177 (mg/s)
	mass flux in river at USGS Gage	M r6 = 21,704.6829 (mg/s)
mass flux into Colby Lake	M cl = 27,392.5131 (mg/s)	
		Average Flow
Convert mass flux to concentration	concentration in river at SW-001	C r1 = 8.43920 (mg/L)
	concentration in river at SW-002	C r2 = 8.22032 (mg/L)
	concentration in river at SW-003	C r3 = 8.21145 (mg/L)
	concentration in river at SW-004	C r4 = 8.19221 (mg/L)
	concentration in river at SW-004A	C r4A = 9.01262 (mg/L)
	concentration in river at SW-005	C r5 = 8.55909 (mg/L)
	concentration in river at USGS Gage	C r6 = 8.53214 (mg/L)
concentration in Colby Lake	C cl = 8.41612 (mg/L)	



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Post-Closure Manganese		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.1500 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.1500 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.1500 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.1500 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.1500 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.1500 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.1500 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.1500 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.1500 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0086 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	0.0100 (mg/L)
	concentration of ground water into SW-001	C g1 =	0.1240 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.1240 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.1240 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.1240 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.1240 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.1240 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.1240 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.1240 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	0.0508 (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	0.0100 (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.5115 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.7450 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.7500 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.1160 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.5115 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.7450 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.7500 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.1604 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.1240 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.1240 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.1240 (mg/L)
	concentration of liner leakage from WWTF pond	C gWTFp =	#N/A (mg/L)

		Average Flow
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 = 19.18914 (mg/s)
	mass flux of ground water into SW-001	M g1 = 0.53166 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns = 0.24338 (mg/s)
	mass flux of surface water into SW-002	M s2 = 23.00704 (mg/s)
	mass flux of ground water into SW-002	M g2 = 0.93894 (mg/s)
	mass flux of surface water into SW-003	M s3 = 6.96374 (mg/s)
	mass flux of ground water into SW-003	M g3 = 0.37388 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep 003 = 0.01601 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3 003 = 0.00085 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO 003 = 0.00014 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s 003 = 0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 = 26.26064 (mg/s)
	mass flux of ground water into SW-004	M g4 = 1.09520 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep 004 = 0.01601 (mg/s)
	mass flux of seepage from West Pit	M gwp = 0.01136 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3 004 = - (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO 004 = 0.00014 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 = #N/A (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO = #N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS = #N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs 004 = 0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s = #N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs = #N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 = - (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 = - (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 = - (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp = - (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp = #N/A (mg/s)
	mass flux of surface water into SW-004A	M s4A = 100.48427 (mg/s)
	mass flux of ground water into SW-004A	M g4A = 4.86262 (mg/s)
	mass flux of West Pit overflow	M sms = 0.66788 (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 = 0.12315 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s = 0.00001 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 = 0.20603 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 = #N/A (mg/s)
	mass flux of surface water into SW-005	M s5 = 153.18647 (mg/s)
	mass flux of ground water into SW-005	M g5 = 7.96588 (mg/s)
	mass flux of surface water into USGS Gage	M s6 = 16.46796 (mg/s)
	mass flux of ground water into USGS Gage	M g6 = 1.64932 (mg/s)
	mass flux of surface water into Colby Lake	M scl = 100.01220 (mg/s)
	mass flux of ground water into Colby Lake	M gcl = 4.10576 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl = 1.65555 (mg/s)
		Average Flow
Mass balance at each node	mass flux in river at SW-001	M r1 = 20.0642 (mg/s)
	mass flux in river at SW-002	M r2 = 44.0102 (mg/s)
	mass flux in river at SW-003	M r3 = 51.3648 (mg/s)
	mass flux in river at SW-004	M r4 = 78.7481 (mg/s)
	mass flux in river at SW-004A	M r4A = 185.0921 (mg/s)
	mass flux in river at SW-005	M r5 = 346.2444 (mg/s)
	mass flux in river at USGS Gage	M r6 = 364.3617 (mg/s)
mass flux into Colby Lake		M cl = 470.1352 (mg/s)
		Average Flow
Convert mass flux to concentration	concentration in river at SW-001	C r1 = 0.12437 (mg/L)
	concentration in river at SW-002	C r2 = 0.13656 (mg/L)
	concentration in river at SW-003	C r3 = 0.13807 (mg/L)
	concentration in river at SW-004	C r4 = 0.14128 (mg/L)
	concentration in river at SW-004A	C r4A = 0.13861 (mg/L)
	concentration in river at SW-005	C r5 = 0.14303 (mg/L)
	concentration in river at USGS Gage	C r6 = 0.14323 (mg/L)
concentration in Colby Lake		C cl = 0.14445 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case	Post-Closure		
Parameter	Sodium		
Input concentration data	concentration of surface water into SW-001	C s1 =	2.5000 (mg/L)
	concentration of surface water into SW-002	C s2 =	2.5000 (mg/L)
	concentration of surface water into SW-003	C s3 =	2.5000 (mg/L)
	concentration of surface water into SW-004	C s4 =	2.5000 (mg/L)
	concentration of surface water into SW-004A	C s4A =	2.5000 (mg/L)
	concentration of surface water into SW-005	C s5 =	2.5000 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	2.5000 (mg/L)
	concentration of surface water into Colby Lake	C scl =	2.5000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	2.5000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	4.8000 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	442.6606 (mg/L)
	concentration of ground water into SW-001	C g1 =	13.3300 (mg/L)
	concentration of ground water into SW-002	C g2 =	13.3300 (mg/L)
	concentration of ground water into SW-003	C g3 =	13.3300 (mg/L)
	concentration of ground water into SW-004	C g4 =	13.3300 (mg/L)
	concentration of ground water into SW-004A	C g4A =	13.3300 (mg/L)
	concentration of ground water into SW-005	C g5 =	13.3300 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	13.3300 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	13.3300 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	924.2597 (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	442.6606 (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	349.3890 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	508.8894 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	671.7238 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	7.1900 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	349.3890 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	508.8894 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	671.7238 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	4.6000 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	13.3300 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	13.3300 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	13.3300 (mg/L)
	concentration of liner leakage from WWTF ponc	C gWTFp =	#N/A (mg/L)
		Average Flow	
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	319.81898 (mg/s)
	mass flux of ground water into SW-001	M g1 =	67.90302 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	135.84000 (mg/s)
	mass flux of surface water into SW-002	M s2 =	383.45066 (mg/s)
	mass flux of ground water into SW-002	M g2 =	100.93613 (mg/s)
	mass flux of surface water into SW-003	M s3 =	116.06239 (mg/s)
	mass flux of ground water into SW-003	M g3 =	40.19169 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep 003 =	291.64553 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3 003 =	0.58262 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO 00 =	0.12190 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s 003 =	0.00041 (mg/s)
	mass flux of surface water into SW-004	M s4 =	437.67728 (mg/s)
	mass flux of ground water into SW-004	M g4 =	117.73415 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep 004 =	291.64553 (mg/s)
	mass flux of seepage from West Pit	M gwp =	502.84557 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3 004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO 00 =	0.12190 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs 0 =	0.00052 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M s4A =	1,674.73782 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	522.73125 (mg/s)
	mass flux of West Pit overflow	M sms =	29,564.41347 (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	84.11972 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00766 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	12.77005 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	2,553.10788 (mg/s)
	mass flux of ground water into SW-005	M g5 =	856.33253 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	274.46599 (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	177.30233 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	1,666.87000 (mg/s)
mass flux of ground water into Colby Lake	M gcl =	441.36963 (mg/s)	
mass flux of surface water from Hoyt Lakes WWTP	M shl =	27.59250 (mg/s)	
		Average Flow	
Mass balance at each node	mass flux in river at SW-001	M r1 =	523.5620 (mg/s)
	mass flux in river at SW-002	M r2 =	1,007.9488 (mg/s)
	mass flux in river at SW-003	M r3 =	1,456.5533 (mg/s)
	mass flux in river at SW-004	M r4 =	2,806.5783 (mg/s)
	mass flux in river at SW-004A	M r4A =	34,665.3582 (mg/s)
	mass flux in river at SW-005	M r5 =	38,074.7966 (mg/s)
	mass flux in river at USGS Gage	M r6 =	38,526.5670 (mg/s)
mass flux into Colby Lake	M cl =	40,662.3991 (mg/s)	
		Average Flow	
Convert mass flux to concentration	concentration in river at SW-001	C r1 =	3.24546 (mg/L)
	concentration in river at SW-002	C r2 =	3.12761 (mg/L)
	concentration in river at SW-003	C r3 =	3.91514 (mg/L)
	concentration in river at SW-004	C r4 =	5.03525 (mg/L)
	concentration in river at SW-004A	C r4A =	25.96072 (mg/L)
	concentration in river at SW-005	C r5 =	15.72829 (mg/L)
	concentration in river at USGS Gage	C r6 =	15.14485 (mg/L)
	concentration in Colby Lake	C cl =	12.49318 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case	Post-Closure		
Parameter	Nickel		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0016 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0016 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0016 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0016 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0016 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0016 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0016 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0016 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0033 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0016 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	0.0433 (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0163 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0163 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0163 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0163 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0163 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0163 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0163 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0163 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	0.0006 (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	0.0433 (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.2206 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.3213 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.4241 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.0190 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.2206 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.3213 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C g3LOs =	0.4241 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0080 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0163 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0163 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0163 (mg/L)
	concentration of liner leakage from WWTF ponc	C gWTFp =	#N/A (mg/L)

		Average Flow	
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 = 0.19957 (mg/s)	
	mass flux of ground water into SW-001	M g1 = 0.08293 (mg/s)	
	mass flux of surface discharges from upstream of PM-1	M sns = 0.04387 (mg/s)	
	mass flux of surface water into SW-002	M s2 = 0.23927 (mg/s)	
	mass flux of ground water into SW-002	M g2 = 0.12327 (mg/s)	
	mass flux of surface water into SW-003	M s3 = 0.07242 (mg/s)	
	mass flux of ground water into SW-003	M g3 = 0.04909 (mg/s)	
	mass flux of seepage from East Pit to SW-003	M gep 003 = 0.00020 (mg/s)	
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3 003 = 0.00037 (mg/s)	
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO 003 = 0.00008 (mg/s)	
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s 003 = 0.00000 (mg/s)	
	mass flux of surface water into SW-004	M s4 = 0.27311 (mg/s)	
	mass flux of ground water into SW-004	M g4 = 0.14379 (mg/s)	
	mass flux of seepage from East Pit to SW-004	M gep 004 = 0.00020 (mg/s)	
	mass flux of seepage from West Pit	M gwp = 0.04920 (mg/s)	
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3 004 = - (mg/s)	
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO 004 = 0.00008 (mg/s)	
	mass flux of liner leakage from Cat 4 stockpile	M gC4 = #N/A (mg/s)	
	mass flux of liner leakage from LOSP	M gC4LO = #N/A (mg/s)	
	mass flux of seepage from Overburden (Storage)	M gOS = #N/A (mg/s)	
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs 004 = 0.00000 (mg/s)	
	mass flux of liner leakage from Cat 4 sumps	M gC4s = #N/A (mg/s)	
	mass flux of liner leakage from LOSP sumps	M gC4LOs = #N/A (mg/s)	
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 = - (mg/s)	
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 = - (mg/s)	
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 = - (mg/s)	
	mass flux of leakage from RTH Pond - PW3	M gRTHp = - (mg/s)	
	mass flux of liner leakage from WWTF pond	M gWTFp = #N/A (mg/s)	
	mass flux of surface water into SW-004A	M s4A = 1.04504 (mg/s)	
	mass flux of ground water into SW-004A	M g4A = 0.63841 (mg/s)	
	mass flux of West Pit overflow	M sms = 2.89258 (mg/s)	
	mass flux of liner leakage from Cat 1 stockpile	M gC12 = 0.05311 (mg/s)	
	mass flux of liner leakage from Cat 1 sumps	M gC12s = 0.00000 (mg/s)	
	mass flux of seepage from Overburden (Cat 1)	M gO12 = 0.03375 (mg/s)	
	mass flux of seepage from Overburden Pond - PW7	M gOp7 = #N/A (mg/s)	
	mass flux of surface water into SW-005	M s5 = 1.59314 (mg/s)	
	mass flux of ground water into SW-005	M g5 = 1.04584 (mg/s)	
	mass flux of surface water into USGS Gage	M s6 = 0.17127 (mg/s)	
	mass flux of ground water into USGS Gage	M g6 = 0.21654 (mg/s)	
	mass flux of surface water into Colby Lake	M scl = 1.04013 (mg/s)	
	mass flux of ground water into Colby Lake	M gcl = 0.53905 (mg/s)	
	mass flux of surface water from Hoyt Lakes WWTP	M shl = 0.03642 (mg/s)	
			Average Flow
	Mass balance at each node	mass flux in river at SW-001	M r1 = 0.3264 (mg/s)
mass flux in river at SW-002		M r2 = 0.6889 (mg/s)	
mass flux in river at SW-003		M r3 = 0.8111 (mg/s)	
mass flux in river at SW-004		M r4 = 1.2774 (mg/s)	
mass flux in river at SW-004A		M r4A = 5.9403 (mg/s)	
mass flux in river at SW-005		M r5 = 8.5793 (mg/s)	
mass flux in river at USGS Gage		M r6 = 8.9671 (mg/s)	
mass flux into Colby Lake	M cl = 10.5827 (mg/s)		
		Average Flow	
Convert mass flux to concentration	concentration in river at SW-001	C r1 = 0.00202 (mg/L)	
	concentration in river at SW-002	C r2 = 0.00214 (mg/L)	
	concentration in river at SW-003	C r3 = 0.00218 (mg/L)	
	concentration in river at SW-004	C r4 = 0.00229 (mg/L)	
	concentration in river at SW-004A	C r4A = 0.00445 (mg/L)	
	concentration in river at SW-005	C r5 = 0.00354 (mg/L)	
	concentration in river at USGS Gage	C r6 = 0.00352 (mg/L)	
concentration in Colby Lake	C cl = 0.00325 (mg/L)		

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Post-Closure Lead		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0005 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0005 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0005 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0005 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0005 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0005 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0005 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0005 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0005 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0002 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	0.0072 (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0011 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0011 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0011 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0011 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0011 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0011 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0011 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0011 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.0111 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	0.0072 (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0264 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0385 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0508 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0264 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0385 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0508 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0007 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0011 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0011 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0011 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Average Flow			
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	0.06396 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00571 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.00425 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	0.07669 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.00848 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.02321 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00338 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.00349 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00004 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.08754 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.00989 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.00349 (mg/s)
	mass flux of ground water into West Pit	M_gwp =	0.00814 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	0.33495 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.04392 (mg/s)
	mass flux of West Pit overflow	M_sms =	0.47854 (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.00636 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	0.51062 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.07195 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.05489 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.01490 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	0.33337 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.03708 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00552 (mg/s)
Average Flow			
Mass balance at each node	mass flux in river at SW-001	M_r1 =	0.0739 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.1591 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.1892 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.2963 (mg/s)
	mass flux in river at SW-004A	M_r4A =	1.1620 (mg/s)
	mass flux in river at SW-005	M_r5 =	1.7446 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	1.8144 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	2.1904 (mg/s)
	concentration in river at SW-001	C_r1 =	0.00046 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00049 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00051 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00054 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00087 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00072 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00071 (mg/L)
	concentration in Colby Lake	C_cl =	0.00067 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Post-Closure Antimony		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0015 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0015 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0015 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0015 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0015 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0015 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0015 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0015 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0015 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0015 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	0.0961 (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0015 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0015 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0015 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0015 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0015 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0015 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0015 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0015 (mg/L)
	concentration of ground water seepage from East Pit	C_gcp =	0.0110 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	0.0961 (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0800 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0800 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0800 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.0004 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0800 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0800 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0800 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0003 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0015 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0015 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0015 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Average Flow			
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	0.19189 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00764 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.04245 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	0.23007 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.01136 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.06964 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00452 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gcp_003 =	0.00348 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00009 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.26261 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.01325 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gcp_004 =	0.00348 (mg/s)
	mass flux of ground water into West Pit	M_gwp =	0.10921 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	1.00484 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.05882 (mg/s)
	mass flux of West Pit overflow	M_sms =	6.42091 (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.01926 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.00071 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	1.53186 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.09636 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.16468 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.01995 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	1.00012 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.04967 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.01656 (mg/s)
Average Flow			
Mass balance at each node	mass flux in river at SW-001	M_r1 =	0.2420 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.4834 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.5612 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.9497 (mg/s)
	mass flux in river at SW-004A	M_r4A =	8.4543 (mg/s)
	mass flux in river at SW-005	M_r5 =	10.0825 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	10.2671 (mg/s)
	mass flux into Colby Lake	M_cl =	11.3335 (mg/s)
Average Flow			
Convert mass flux to concentration	concentration in river at SW-001	C_r1 =	0.00150 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00150 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00151 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00170 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00633 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00416 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00404 (mg/L)
	concentration in Colby Lake	C_cl =	0.00348 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Post-Closure Selenium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0005 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0005 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0005 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0005 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0005 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0005 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0005 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0005 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0005 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0005 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	0.0148 (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0019 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0019 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0019 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0019 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0019 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0019 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0019 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0019 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.0291 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	0.0148 (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0029 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0029 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0029 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.0019 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0029 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0029 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0029 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0004 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0019 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0019 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0019 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Average Flow			
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	0.06396 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00973 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.01415 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	0.07669 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.01446 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.02321 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00576 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.00917 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.08754 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.01687 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.00917 (mg/s)
	mass flux of ground water into SW-004	M_gwp =	0.01687 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	0.33495 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.07490 (mg/s)
	mass flux of West Pit overflow	M_sms =	0.99158 (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.00070 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.00337 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	0.51062 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.12270 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.05489 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.02540 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	0.33337 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.06324 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00552 (mg/s)
Average Flow			
Mass balance at each node	mass flux in river at SW-001	M_r1 =	0.0878 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.1790 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.2171 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.3476 (mg/s)
	mass flux in river at SW-004A	M_r4A =	1.7531 (mg/s)
	mass flux in river at SW-005	M_r5 =	2.3864 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	2.4667 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	2.8688 (mg/s)
	concentration in river at SW-001	C_r1 =	0.00054 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00056 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00058 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00062 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00131 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00099 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00097 (mg/L)
	concentration in Colby Lake	C_cl =	0.00088 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Post-Closure sulfate		
Input concentration data	concentration of surface water into SW-001	C_s1 =	9.0000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	9.0000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	9.0000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	9.0000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	9.0000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	9.0000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	9.0000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	9.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	9.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	22.0000 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	218.9627 (mg/L)
	concentration of ground water into SW-001	C_g1 =	16.1300 (mg/L)
	concentration of ground water into SW-002	C_g2 =	16.1300 (mg/L)
	concentration of ground water into SW-003	C_g3 =	16.1300 (mg/L)
	concentration of ground water into SW-004	C_g4 =	16.1300 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	16.1300 (mg/L)
	concentration of ground water into SW-005	C_g5 =	16.1300 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	16.1300 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	16.1300 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	281.5638 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	218.9627 (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	854.3331 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	1,244.3469 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	1,642.5130 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	68.3000 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	854.3331 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	1,244.3469 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	1,642.5130 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	35.1700 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	16.1300 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	16.1300 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	16.1300 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Average Flow			
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	1,151.34833 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	82.16622 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	622.60000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	1,380.42236 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	122.13802 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	417.82460 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	48.63406 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	88.84606 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	1,424.64 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.29807 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00100 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	1,575.63821 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	142.46451 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	88.84606 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	248.75598 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.29807 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00127 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	6,029.05614 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	632.53226 (mg/s)
	mass flux of West Pit overflow	M_sms =	14,625.41408 (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	205.69127 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.01872 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	121.30657 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	9,191.18837 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	1,036.20733 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	988.07755 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	214.54513 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	6,000.73200 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	534.08043 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	99.33300 (mg/s)
Average Flow			
Mass balance at each node	mass flux in river at SW-001	M_r1 =	1,856.1145 (mg/s)
	mass flux in river at SW-002	M_r2 =	3,358.6749 (mg/s)
	mass flux in river at SW-003	M_r3 =	3,915.7034 (mg/s)
	mass flux in river at SW-004	M_r4 =	5,971.7075 (mg/s)
	mass flux in river at SW-004A	M_r4A =	27,585.7265 (mg/s)
	mass flux in river at SW-005	M_r5 =	37,813.1222 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	39,015.7449 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	45,649.8903 (mg/s)
	concentration in river at SW-001	C_r1 =	11.50568 (mg/L)
	concentration in river at SW-002	C_r2 =	10.42180 (mg/L)
	concentration in river at SW-003	C_r3 =	10.52521 (mg/L)
	concentration in river at SW-004	C_r4 =	10.71378 (mg/L)
	concentration in river at SW-004A	C_r4A =	20.65882 (mg/L)
	concentration in river at SW-005	C_r5 =	15.62019 (mg/L)
	concentration in river at USGS Gage	C_r6 =	15.33715 (mg/L)
	concentration in Colby Lake	C_cl =	14.02554 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Post-Closure Thallium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0004 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0004 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0004 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0004 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0004 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0004 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0004 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0004 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0004 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0003 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	0.0002 (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0000 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0000 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0000 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0000 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0000 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0000 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0000 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0000 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.0001 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	0.0002 (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0000 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0000 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0000 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0000 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Average Flow			
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	0.05117 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00002 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.00809 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	0.06135 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.00003 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.01857 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00001 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.00005 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.07003 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.00004 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.00005 (mg/s)
	mass flux of ground water into SW-004	M_gwp =	0.00020 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	0.26796 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.00016 (mg/s)
	mass flux of West Pit overflow	M_sms =	0.01157 (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	0.40850 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.00026 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.04391 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.00005 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	0.26670 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.00013 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00441 (mg/s)
Average Flow			
Mass balance at each node	mass flux in river at SW-001	M_r1 =	0.0593 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.1207 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.1393 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.2096 (mg/s)
	mass flux in river at SW-004A	M_r4A =	0.4893 (mg/s)
	mass flux in river at SW-005	M_r5 =	0.8960 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	0.9420 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	1.2133 (mg/s)
	concentration in river at SW-001	C_r1 =	0.00037 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00037 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00037 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00038 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00037 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00037 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00037 (mg/L)
	concentration in Colby Lake	C_cl =	0.00037 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Post-Closure Vanadium		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0009 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0009 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0009 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0009 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0009 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0009 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0009 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0009 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0009 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0043 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	0.0617 (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0043 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0043 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0043 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0043 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0043 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0043 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0043 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0043 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	0.0467 (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	0.0617 (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.1317 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.1918 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.2532 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.0014 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.1317 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.1918 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.2532 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0017 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0043 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0043 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0043 (mg/L)
	concentration of liner leakage from WWTF pond	C gWTFp =	#N/A (mg/L)

		Average Flow
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 = 0.11513 (mg/s)
	mass flux of ground water into SW-001	M g1 = 0.02190 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns = 0.12169 (mg/s)
	mass flux of surface water into SW-002	M s2 = 0.13804 (mg/s)
	mass flux of ground water into SW-002	M g2 = 0.03256 (mg/s)
	mass flux of surface water into SW-003	M s3 = 0.04178 (mg/s)
	mass flux of ground water into SW-003	M g3 = 0.01297 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep 003 = 0.01475 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3 003 = 0.00022 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO 003 = 0.00005 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s 003 = 0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 = 0.15756 (mg/s)
	mass flux of ground water into SW-004	M g4 = 0.03798 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep 004 = 0.01475 (mg/s)
	mass flux of seepage from West Pit	M gwp = 0.07008 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3 004 = - (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO 004 = 0.00005 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 = #N/A (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO = #N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS = #N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs 004 = 0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s = #N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs = #N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 = - (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 = - (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 = - (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp = - (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp = #N/A (mg/s)
	mass flux of surface water into SW-004A	M s4A = 0.60291 (mg/s)
	mass flux of ground water into SW-004A	M g4A = 0.16862 (mg/s)
	mass flux of West Pit overflow	M sms = 4.12054 (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 = 0.03171 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s = 0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 = 0.00249 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 = #N/A (mg/s)
	mass flux of surface water into SW-005	M s5 = 0.91912 (mg/s)
	mass flux of ground water into SW-005	M g5 = 0.27624 (mg/s)
	mass flux of surface water into USGS Gage	M s6 = 0.09881 (mg/s)
	mass flux of ground water into USGS Gage	M g6 = 0.05719 (mg/s)
	mass flux of surface water into Colby Lake	M scl = 0.60007 (mg/s)
	mass flux of ground water into Colby Lake	M gcl = 0.14238 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl = 0.00993 (mg/s)
		Average Flow
Mass balance at each node	mass flux in river at SW-001	M r1 = 0.2587 (mg/s)
	mass flux in river at SW-002	M r2 = 0.4293 (mg/s)
	mass flux in river at SW-003	M r3 = 0.4991 (mg/s)
	mass flux in river at SW-004	M r4 = 0.7795 (mg/s)
	mass flux in river at SW-004A	M r4A = 5.7058 (mg/s)
	mass flux in river at SW-005	M r5 = 6.9011 (mg/s)
	mass flux in river at USGS Gage	M r6 = 7.0571 (mg/s)
mass flux into Colby Lake	M cl = 7.8095 (mg/s)	
		Average Flow
Convert mass flux to concentration	concentration in river at SW-001	C r1 = 0.00160 (mg/L)
	concentration in river at SW-002	C r2 = 0.00133 (mg/L)
	concentration in river at SW-003	C r3 = 0.00134 (mg/L)
	concentration in river at SW-004	C r4 = 0.00140 (mg/L)
	concentration in river at SW-004A	C r4A = 0.00427 (mg/L)
	concentration in river at SW-005	C r5 = 0.00285 (mg/L)
	concentration in river at USGS Gage	C r6 = 0.00277 (mg/L)
	concentration in Colby Lake	C cl = 0.00240 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1

Case Parameter	Post-Closure Zinc		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0160 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0160 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0160 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0160 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0160 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0160 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0160 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0160 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0620 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0073 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	0.0477 (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0275 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0275 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0275 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0275 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0275 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0275 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0275 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0275 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.0291 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	0.0477 (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0900 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0900 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0900 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.0030 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0900 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0900 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0900 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0046 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0275 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0275 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0275 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Average Flow			
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	2.04684 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.14009 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.20744 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	2.45408 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.20823 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.74280 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.08292 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.00918 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00010 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_00 =	0.00002 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	2.80113 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.24289 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.00918 (mg/s)
	mass flux of ground water into SW-004	M_gwp =	0.05416 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_00 =	0.00002 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_0 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	10.71832 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	1.07840 (mg/s)
	mass flux of West Pit overflow	M_sms =	3.18452 (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.02167 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.00533 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	16.33989 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	1.76663 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	1.75658 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.36578 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	10.66797 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.91055 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.68429 (mg/s)
Average Flow			
Mass balance at each node	mass flux in river at SW-001	M_r1 =	2.3944 (mg/s)
	mass flux in river at SW-002	M_r2 =	5.0567 (mg/s)
	mass flux in river at SW-003	M_r3 =	5.8917 (mg/s)
	mass flux in river at SW-004	M_r4 =	8.9991 (mg/s)
	mass flux in river at SW-004A	M_r4A =	24.0073 (mg/s)
	mass flux in river at SW-005	M_r5 =	42.1139 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	44.2362 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	56.4950 (mg/s)
	concentration in river at SW-001	C_r1 =	0.01484 (mg/L)
	concentration in river at SW-002	C_r2 =	0.01569 (mg/L)
	concentration in river at SW-003	C_r3 =	0.01584 (mg/L)
	concentration in river at SW-004	C_r4 =	0.01615 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.01798 (mg/L)
	concentration in river at SW-005	C_r5 =	0.01740 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.01739 (mg/L)
	concentration in Colby Lake	C_cl =	0.01736 (mg/L)

## Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1 - Mine Site - Reaso

### FLOWS

Case Flow	Post-Closure High Flow Conditions (10-yr, 24-hr rainfall event)			
Total flow in Partridge River	flow in river at SW-001	Q_r1_H =	85.35	(cfs)
	flow in river at SW-002	Q_r2_H =	174.33	(cfs)
	flow in river at SW-003	Q_r3_H =	231.90	(cfs)
	flow in river at SW-004	Q_r4_H =	294.31	(cfs)
	flow in river at SW-004A	Q_r4a_H =	1,007.71	(cfs)
	flow in river at SW-005	Q_r5_H =	1,144.18	(cfs)
	flow in river at USGS Gage	Q_r6_H =	1,143.34	(cfs)
	total flow into Colby Lake	Q_cl_H =	1,480.87	(cfs)
	flow check	Q_ck_H =	1,480.87	(cfs)
Input flow data	surface water flow into SW-001	Q_s1_H =	84.17	(cfs)
	surface water flow into SW-002	Q_s2_H =	88.71	(cfs)
	surface water flow into SW-003	Q_s3_H =	57.45	(cfs)
	surface water flow into SW-004	Q_s4_H =	62.06	(cfs)
	surface water flow into SW-004A	Q_s4a_H =	697.62	(cfs)
	surface water flow into SW-005	Q_s5_H =	134.20	(cfs)
	surface water flow into USGS Gage	Q_s6_H =	(1.31)	(cfs)
	surface water flow into Colby Lake	Q_scl_H =	335.97	(cfs)
	surface water inflow from Hoyt Lakes WWTP	Q_shl_H =	0.39	(cfs)
	surface water inflow from discharges upstream of PM-1	Q_sns_H =	1.00	(cfs)
	surface water flow from West Pit overflow	Q_sms_H =	14.20	(cfs)
	ground water flow into SW-001	Q_g1_H =	0.18	(cfs)
	ground water flow into SW-002	Q_g2_H =	0.27	(cfs)
	ground water flow into SW-003	Q_g3_H =	0.11	(cfs)
	ground water flow into SW-004	Q_g4_H =	0.31	(cfs)
	ground water flow into SW-004A	Q_g4a_H =	1.39	(cfs)
	ground water flow into SW-005	Q_g5_H =	2.27	(cfs)
	ground water flow into USGS Gage	Q_g6_H =	0.47	(cfs)
	ground water flow into Colby Lake	Q_gcl_H =	1.17	(cfs)
	ground water seepage from East Pit to SW-003	Q_gep_003_H =	0.0112	(cfs)
	ground water seepage from East Pit to SW-004	Q_gep_004_H =	0.0112	(cfs)
	ground water seepage from West Pit	Q_gwp_H =	0.04	(cfs)
	ground water liner leakage from Cat 1 stockpile	Q_gC12_H =	0.0227	(cfs)
	ground water liner leakage from Cat 2/3 stockpile to SW-003	Q_gC3_003_H =	0.0002	(cfs)
	ground water liner leakage from Cat 2/3 stockpile to SW-004	Q_gC3_004_H =	-	(cfs)
	ground water liner leakage from Cat 3LO stockpile to SW-003	Q_gC3LO_003_H =	0.0002	(cfs)
	ground water liner leakage from Cat 3LO stockpile to SW-004	Q_gC3LO_004_H =	0.0002	(cfs)
	ground water liner leakage from Cat 4 stockpile	Q_gC4_H =	-	(cfs)
	ground water liner leakage from LOSP	Q_gC4LO_H =	-	(cfs)
	ground water seepage from Overburden Storage	Q_gOS_H =	-	(cfs)
	ground water seepage from Overburden (Cat 1)	Q_gO12_H =	0.1674	(cfs)
	ground water liner leakage from Cat 1 sumps	Q_gC12s_H =	0.0000	(cfs)
	ground water liner leakage from Cat 2/3 sumps	Q_gC3s_H =	0.0000	(cfs)
	ground water liner leakage from Cat 3LO sumps	Q_gC3LOs_H =	0.0000	(cfs)
	ground water liner leakage from Cat 4 sumps	Q_gC4s_H =	-	(cfs)
	ground water liner leakage from LOSP sumps	Q_gC4LOs_H =	-	(cfs)
	ground water seepage from Overburden pond - PW1	Q_gOp1_H =	-	(cfs)
	ground water seepage from Overburden pond - PW7	Q_gOp7_H =	-	(cfs)
	ground water leakage from Haul Road pond - PW2	Q_gHRp2_H =	-	(cfs)
	ground water leakage from Haul Road pond - PW4	Q_gHRp4_H =	-	(cfs)
	ground water leakage from RTH pond - PW3	Q_gRTHp_H =	-	(cfs)
	ground water liner leakage from WWTF pond	Q_gWTFp_H =	-	(cfs)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1 - Mine Site - Reasonable

Case Parameter	Post-Closure Silver		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0001 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0001 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0001 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0001 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0001 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0001 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0001 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0001 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0001 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0001 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	0.0008 (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0006 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0006 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0006 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0006 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0006 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0006 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0006 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0006 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.0002 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	0.0008 (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0007 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0007 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0007 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0007 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0007 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0007 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	- (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0006 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0006 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0006 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	0.23820 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00280 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.00340 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	0.25106 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.00416 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.16257 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00166 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.00006 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.17562 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.00486 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.00006 (mg/s)
	mass flux of liner leakage from West Pit	M_gwp =	0.00090 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	1.97427 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.02157 (mg/s)
	mass flux of West Pit overflow	M_sms =	0.31742 (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.00045 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	0.37979 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.03533 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	(0.00372) (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.00732 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	0.95080 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.01821 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00110 (mg/s)
Mass balance at each node	mass flux in river at SW-001	M_r1 =	0.2444 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.4996 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.6639 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.8454 (mg/s)
	mass flux in river at SW-004A	M_r4A =	3.1591 (mg/s)
	mass flux in river at SW-005	M_r5 =	3.5742 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	3.5815 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	4.5516 (mg/s)
	concentration in river at SW-001	C_r1 =	0.00010 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00010 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00010 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00010 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00011 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00011 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00011 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.00012 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1 - Mine Site - Reasonable

Case Parameter	Post-Closure Aluminum		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0700 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0700 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0700 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0700 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0700 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0700 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0700 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0700 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0700 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0173 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	0.0186 (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.1250 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.1250 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.1250 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.1250 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.1250 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.1250 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.1250 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.1250 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.0457 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	0.0186 (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	1.6800 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	1.6800 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	1.6800 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.1400 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	1.6800 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	1.6800 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	1.6800 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.4106 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.1250 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.1250 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.1250 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	166.74077 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.63675 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.48959 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	175.74303 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.94651 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	113.79939 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.37689 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.01442 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.01001 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00860 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	122.93188 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	1.10403 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.01442 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	0.02109 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00860 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	1,381.99182 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	4.90183 (mg/s)
	mass flux of West Pit overflow	M_sms =	7.46254 (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	1.07866 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00004 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.66310 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	265.84963 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	8.03013 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	(2 60468) (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	1.66263 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	665.55657 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	4.13888 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.77259 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	167.8671 (mg/s)
	mass flux in river at SW-002	M_r2 =	344.5567 (mg/s)
	mass flux in river at SW-003	M_r3 =	458.7660 (mg/s)
	mass flux in river at SW-004	M_r4 =	582.5450 (mg/s)
	mass flux in river at SW-004A	M_r4A =	1,978.5440 (mg/s)
	mass flux in river at SW-005	M_r5 =	2,252.8238 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	2,254.4864 (mg/s)
	mass flux into Colby Lake	M_cl =	2,924.9544 (mg/s)
	High Flow		
	concentration in river at SW-001	C_r1 =	0.06950 (mg/L)
	concentration in river at SW-002	C_r2 =	0.06984 (mg/L)
	concentration in river at SW-003	C_r3 =	0.06991 (mg/L)
	concentration in river at SW-004	C_r4 =	0.06998 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.06939 (mg/L)
	concentration in river at SW-005	C_r5 =	0.06957 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.06968 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.07074 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1 - Mine Site - Reasonable

Case Parameter	Post-Closure Arsenic		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0021 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0021 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0021 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0021 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0021 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0021 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0021 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0021 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0021 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0065 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	0.1880 (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0022 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0022 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0022 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0022 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0022 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0022 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0022 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0022 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.0100 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	0.1880 (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.1552 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.2260 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.2984 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.0027 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.1552 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.2260 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.2984 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0016 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0022 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0022 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0022 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M_s1 =	5.02604 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.01100 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.18395 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	5.29740 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.01636 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	3.43024 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00651 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.00314 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00135 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00153 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	3.70552 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.01908 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.00314 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	0.21355 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00153 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	41.65718 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.08470 (mg/s)
	mass flux of West Pit overflow	M_sms =	75.54628 (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.09964 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.01279 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	8.01347 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.13876 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	(0.07851) (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.02873 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	20.06178 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.07152 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.02329 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	5.2210 (mg/s)
	mass flux in river at SW-002	M_r2 =	10.5347 (mg/s)
	mass flux in river at SW-003	M_r3 =	13.9775 (mg/s)
	mass flux in river at SW-004	M_r4 =	17.9203 (mg/s)
	mass flux in river at SW-004A	M_r4A =	135.3209 (mg/s)
	mass flux in river at SW-005	M_r5 =	143.4732 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	143.5019 (mg/s)
	mass flux into Colby Lake	M_cl =	163.6585 (mg/s)
	High Flow		
	concentration in river at SW-001	C_r1 =	0.00216 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00214 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00213 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00215 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00475 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00443 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00444 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.00493 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1 - Mine Site - Reasonable

Case Parameter	Post-Closure Boron		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0450 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0450 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0450 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0450 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0450 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0450 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0450 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0450 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0450 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0960 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	0.3597 (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0870 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0870 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0870 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0870 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0870 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0870 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0870 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0870 (mg/L)
	concentration of ground water seepage from East Pit	C gep =	0.2602 (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	0.3597 (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.5810 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.7600 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.7600 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.0370 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.5810 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.7600 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.7600 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0622 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0870 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0870 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0870 (mg/L)
	concentration of liner leakage from WWTF pond	C gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M s1 =	107.19050 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.44318 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	2.71680 (mg/s)
	mass flux of surface water into SW-002	M s2 =	112.97766 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.65877 (mg/s)
	mass flux of surface water into SW-003	M s3 =	73.15675 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.26232 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gep_003 =	0.08209 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3_003 =	0.00453 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO_003 =	0.00389 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	79.02764 (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.76841 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gep_004 =	0.08209 (mg/s)
	mass flux of seepage from West Pit	M gwp =	0.40857 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO_004 =	0.00389 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M s4A =	888.42331 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	3.41167 (mg/s)
	mass flux of West Pit overflow	M sms =	144.53520 (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	0.37305 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	0.17525 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	170.90334 (mg/s)
	mass flux of ground water into SW-005	M g5 =	5.58897 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	(1.67443) (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	1.15719 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	427.85780 (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	2.88066 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.49667 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M r1 =	110.3505 (mg/s)
	mass flux in river at SW-002	M r2 =	223.9869 (mg/s)
	mass flux in river at SW-003	M r3 =	297.4965 (mg/s)
	mass flux in river at SW-004	M r4 =	377.7871 (mg/s)
	mass flux in river at SW-004A	M r4A =	1,414.7056 (mg/s)
	mass flux in river at SW-005	M r5 =	1,591.1979 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M r6 =	1,592.3551 (mg/s)
	mass flux into Colby Lake	M cl =	2,023.5902 (mg/s)
	High Flow		
	concentration in river at SW-001	C r1 =	0.04569 (mg/L)
	concentration in river at SW-002	C r2 =	0.04540 (mg/L)
	concentration in river at SW-003	C r3 =	0.04533 (mg/L)
	concentration in river at SW-004	C r4 =	0.04536 (mg/L)
	concentration in river at SW-004A	C r4A =	0.04961 (mg/L)
	concentration in river at SW-005	C r5 =	0.04914 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.04921 (mg/L)
	concentration in Colby Lake (H)	C cl =	0.05120 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1 - Mine Site - Reasonable

Case Parameter	Post-Closure Barium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0077 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0077 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0077 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0077 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0077 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0077 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0077 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0077 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0077 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0050 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	0.0943 (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0219 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0219 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0219 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0219 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0219 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0219 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0219 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0219 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.0270 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	0.0943 (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.1900 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.1900 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.1900 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.0140 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.1900 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.1900 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.1900 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0168 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0219 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0219 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0219 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	18.29384 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.11166 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.14150 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	19.28152 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.16598 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	12.48542 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.06609 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.00852 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00113 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00097 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	13.48738 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.19360 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.00852 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	0.10707 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00097 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	151.62425 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.85959 (mg/s)
	mass flux of West Pit overflow	M_sms =	37.87847 (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.12199 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.06631 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	29.16750 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	1.40816 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	(0.28577) (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.29156 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	73.02106 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.72579 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.08476 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	18.5470 (mg/s)
	mass flux in river at SW-002	M_r2 =	37.9945 (mg/s)
	mass flux in river at SW-003	M_r3 =	50.5566 (mg/s)
	mass flux in river at SW-004	M_r4 =	64.3542 (mg/s)
	mass flux in river at SW-004A	M_r4A =	254.3048 (mg/s)
	mass flux in river at SW-005	M_r5 =	285.4805 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	285.7720 (mg/s)
	mass flux into Colby Lake	M_cl =	359.6036 (mg/s)
	High Flow		
	concentration in river at SW-001	C_r1 =	0.00768 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00770 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00770 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00773 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00894 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00882 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00883 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.00938 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1 - Mine Site - Reasonable

Case Parameter	Post-Closure Beryllium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0001 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0001 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0001 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0001 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0001 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0001 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0001 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0001 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0001 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0001 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	0.0006 (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0001 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0001 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0001 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0001 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0001 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0001 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0001 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0001 (mg/L)
	concentration of ground water seepage from East Pit	C_gcp =	0.0001 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	0.0006 (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0002 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0002 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	- (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0001 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0001 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0001 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	0.23820 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00074 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.00283 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	0.25106 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.00110 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.16257 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00044 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gcp_003 =	0.00002 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.17562 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.00128 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gcp_004 =	0.00002 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	0.00069 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	1.97427 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.00569 (mg/s)
	mass flux of West Pit overflow	M_sms =	0.24448 (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.00013 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	0.37979 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.00931 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	(0.00372) (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.00193 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	0.95080 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.00480 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00110 (mg/s)
Mass balance at each node	mass flux in river at SW-001	M_r1 =	0.2418 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.4939 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.6570 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.8346 (mg/s)
	mass flux in river at SW-004A	M_r4A =	3.0591 (mg/s)
	mass flux in river at SW-005	M_r5 =	3.4482 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	3.4502 (mg/s)
	mass flux into Colby Lake	M_cl =	4.4069 (mg/s)
Convert mass flux to concentration	concentration in river at SW-001	C_r1 =	0.00010 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00010 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00010 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00010 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00011 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00011 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00011 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.00011 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1 - Mine Site - Reasonable

Case Parameter	Post-Closure Calcium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	17.0000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	17.0000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	17.0000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	17.0000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	17.0000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	17.0000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	17.0000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	17.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	17.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	24.5000 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	121.0823 (mg/L)
	concentration of ground water into SW-001	C_g1 =	14.7900 (mg/L)
	concentration of ground water into SW-002	C_g2 =	14.7900 (mg/L)
	concentration of ground water into SW-003	C_g3 =	14.7900 (mg/L)
	concentration of ground water into SW-004	C_g4 =	14.7900 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	14.7900 (mg/L)
	concentration of ground water into SW-005	C_g5 =	14.7900 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	14.7900 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	14.7900 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	102.5816 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	121.0823 (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	540.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	540.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	540.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	15.8000 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	540.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	540.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	540.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	9.3700 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	14.7900 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	14.7900 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	14.7900 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	40,494.18700 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	75.34026 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	693.35000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	42,680.45049 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	111.99140 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	27,636.99421 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	44.59378 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	32.36912 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	3.21789 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	2.76568 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00044 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	29,854.88526 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	130.62927 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	32.36912 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	137.54484 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	2.76568 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00042 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	335,626.58551 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	579.98463 (mg/s)
	mass flux of West Pit overflow	M_sms =	48,658.11415 (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	346.71361 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.01183 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	74.83577 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	64,563.48220 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	950.12439 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	(632.56409) (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	196.72179 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	161,635.16700 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	489.71169 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	187.62900 (mg/s)
Mass balance at each node	mass flux in river at SW-001	M_r1 =	41,262.8773 (mg/s)
	mass flux in river at SW-002	M_r2 =	84,055.3192 (mg/s)
	mass flux in river at SW-003	M_r3 =	111,775.2603 (mg/s)
	mass flux in river at SW-004	M_r4 =	141,933.4553 (mg/s)
	mass flux in river at SW-004A	M_r4A =	527,219.7008 (mg/s)
	mass flux in river at SW-005	M_r5 =	582,733.3074 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	582,930.0292 (mg/s)
	mass flux into Colby Lake	M_cl =	755,242.5369 (mg/s)
Convert mass flux to concentration	concentration in river at SW-001	C_r1 =	17.08321 (mg/L)
	concentration in river at SW-002	C_r2 =	17.03735 (mg/L)
	concentration in river at SW-003	C_r3 =	17.03206 (mg/L)
	concentration in river at SW-004	C_r4 =	17.04068 (mg/L)
	concentration in river at SW-004A	C_r4A =	18.48707 (mg/L)
	concentration in river at SW-005	C_r5 =	18.30532 (mg/L)
	concentration in river at USGS Gage	C_r6 =	18.32493 (mg/L)
	concentration in Colby Lake (H)	C_cl =	18.60088 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1 - Mine Site - Reasonable

Case Parameter	Post-Closure Cadmium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0001 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0001 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0001 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0001 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0001 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0001 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0001 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0001 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0001 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0001 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	0.0002 (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0001 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0001 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0001 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0001 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0001 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0001 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0001 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0001 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.0001 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	0.0002 (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0002 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0002 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0002 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0001 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0001 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0001 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0001 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	0.23820 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00051 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.00283 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	0.25106 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.00076 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.16257 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00030 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.00004 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.17562 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.00088 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.00004 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	0.00022 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	1.97427 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.00392 (mg/s)
	mass flux of West Pit overflow	M_sms =	0.07892 (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.00012 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	0.37979 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.00642 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	(0.00372) (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.00133 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	0.95080 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.00331 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00110 (mg/s)
Mass balance at each node	mass flux in river at SW-001	M_r1 =	0.2415 (mg/s)
	mass flux in river at SW-002	M_r2 =	0.4934 (mg/s)
	mass flux in river at SW-003	M_r3 =	0.6563 (mg/s)
	mass flux in river at SW-004	M_r4 =	0.8330 (mg/s)
	mass flux in river at SW-004A	M_r4A =	2.8903 (mg/s)
	mass flux in river at SW-005	M_r5 =	3.2765 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	3.2778 (mg/s)
	mass flux into Colby Lake	M_cl =	4.2330 (mg/s)
Convert mass flux to concentration	concentration in river at SW-001	C_r1 =	0.00010 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00010 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00010 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00010 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00010 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00010 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00010 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.00010 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1 - Mine Site - Reasonable

Case Parameter	Post-Closure Chloride		
Input concentration data	concentration of surface water into SW-001	C_s1 =	8.0000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	8.0000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	8.0000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	8.0000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	8.0000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	8.0000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	8.0000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	8.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	8.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	1.6000 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	30.3040 (mg/L)
	concentration of ground water into SW-001	C_g1 =	6.6000 (mg/L)
	concentration of ground water into SW-002	C_g2 =	6.6000 (mg/L)
	concentration of ground water into SW-003	C_g3 =	6.6000 (mg/L)
	concentration of ground water into SW-004	C_g4 =	6.6000 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	6.6000 (mg/L)
	concentration of ground water into SW-005	C_g5 =	6.6000 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	6.6000 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	6.6000 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	75.0763 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	30.3040 (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	- (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	- (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	- (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	2.3300 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	- (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	- (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	- (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	5.3500 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	6.6000 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	6.6000 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	6.6000 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	19,056.08800 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	33.62040 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	45.28000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	20,084.91788 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	49.97588 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	13,005.64433 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	19.89986 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	23.68996 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	- (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	- (mg/s)
	mass flux of surface water into SW-004	M_s4 =	14,049.35777 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	58.29298 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	23.68996 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	34.42422 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	- (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	- (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	157,941.92259 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	258.81667 (mg/s)
	mass flux of West Pit overflow	M_sms =	12,177.97526 (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	- (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	- (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	11.03591 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	30,382.81515 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	423.99060 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	(297.67722) (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	87.78660 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	76,063.60800 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	218.53260 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	88.29600 (mg/s)
Mass balance at each node			High Flow
	mass flux in river at SW-001	M_r1 =	19,134.9884 (mg/s)
	mass flux in river at SW-002	M_r2 =	39,269.8822 (mg/s)
	mass flux in river at SW-003	M_r3 =	52,319.1163 (mg/s)
	mass flux in river at SW-004	M_r4 =	66,484.8812 (mg/s)
	mass flux in river at SW-004A	M_r4A =	236,874.6317 (mg/s)
	mass flux in river at SW-005	M_r5 =	267,681.4374 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	267,769.2240 (mg/s)
	mass flux into Colby Lake	M_cl =	344,139.6606 (mg/s)
			High Flow
	concentration in river at SW-001	C_r1 =	7.92206 (mg/L)
	concentration in river at SW-002	C_r2 =	7.95969 (mg/L)
	concentration in river at SW-003	C_r3 =	7.97227 (mg/L)
	concentration in river at SW-004	C_r4 =	7.98224 (mg/L)
	concentration in river at SW-004A	C_r4A =	8.30606 (mg/L)
	concentration in river at SW-005	C_r5 =	8.26678 (mg/L)
	concentration in river at USGS Gage	C_r6 =	8.27560 (mg/L)
	concentration in Colby Lake (H)	C_cl =	8.27415 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1 - Mine Site - Reasonable

Case Parameter	Post-Closure Cobalt		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0005 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0005 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0005 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0005 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0005 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0005 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0005 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0005 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0005 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0005 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	0.0063 (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0017 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0017 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0017 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0017 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0017 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0017 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0017 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0017 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.0000 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	0.0063 (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0235 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0342 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0452 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.0013 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0235 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0342 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0452 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0011 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0017 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0017 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0017 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M_s1 =	1.19101 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00841 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.01415 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	1.25531 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.01249 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.81285 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00497 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.00002 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00020 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00023 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.87808 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.01457 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.00002 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	0.00712 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00023 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	9.87137 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.06470 (mg/s)
	mass flux of West Pit overflow	M_sms =	2.52042 (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.01509 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.00616 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	1.89893 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.10600 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	(0.01860) (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.02195 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	4.75398 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.05463 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00552 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	1.2136 (mg/s)
	mass flux in river at SW-002	M_r2 =	2.4814 (mg/s)
	mass flux in river at SW-003	M_r3 =	3.2996 (mg/s)
	mass flux in river at SW-004	M_r4 =	4.1997 (mg/s)
	mass flux in river at SW-004A	M_r4A =	16.6774 (mg/s)
	mass flux in river at SW-005	M_r5 =	18.6823 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	18.7043 (mg/s)
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C_r1 =	0.00050 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00050 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00050 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00050 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00058 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00058 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00058 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.00062 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1 - Mine Site - Reasonable A

Case Parameter	Post-Closure Copper		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0017 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0017 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0017 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0017 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0017 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0017 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0017 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0017 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0190 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0012 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	0.0060 (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0030 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0030 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0030 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0030 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0030 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0030 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0030 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0030 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.0014 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	0.0060 (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0920 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0920 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0920 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.0170 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0920 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0920 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0920 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0214 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0030 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0030 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0030 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	4.04942 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.01503 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.03509 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	4.26805 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.02234 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	2.76370 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00889 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.00045 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00055 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00047 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	2.98549 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.02606 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.00045 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	0.00682 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00047 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	33.56266 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.11568 (mg/s)
	mass flux of West Pit overflow	M_sms =	2.41116 (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.05907 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.08052 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	6.45635 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.18951 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	(0.06326) (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.03924 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	16.16352 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.09768 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.20970 (mg/s)
Mass balance at each node	mass flux in river at SW-001	M_r1 =	4.0995 (mg/s)
	mass flux in river at SW-002	M_r2 =	8.3899 (mg/s)
	mass flux in river at SW-003	M_r3 =	11.1640 (mg/s)
	mass flux in river at SW-004	M_r4 =	14.1833 (mg/s)
	mass flux in river at SW-004A	M_r4A =	50.4124 (mg/s)
	mass flux in river at SW-005	M_r5 =	57.0582 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	57.0975 (mg/s)
	mass flux into Colby Lake	M_cl =	73.5684 (mg/s)
Convert mass flux to concentration	concentration in river at SW-001	C_r1 =	0.00170 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00170 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00170 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00170 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00177 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00176 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00176 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.00184 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1 - Mine Site - Reasonable

Case Parameter	Post-Closure Fluoride		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0700 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0700 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0700 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0700 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0700 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0700 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0700 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0700 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0700 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.1400 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	0.3430 (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.2800 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.2800 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.2800 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.2800 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.2800 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.2800 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.2800 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.2800 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.3772 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	0.3430 (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0621 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0621 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0621 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.4200 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0621 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0621 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0621 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.2239 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.2800 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.2800 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.2800 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M_s1 =	166.74077 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	1.42632 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	3.96200 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	175.74303 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	2.12019 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	113.79939 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.84424 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.11903 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00037 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00032 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	122.93188 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	2.47304 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.11903 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	0.38958 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00032 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	1,381.99182 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	10.98010 (mg/s)
	mass flux of West Pit overflow	M_sms =	137.81861 (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.03986 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	1.98931 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	265.84963 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	17.98748 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	(2,604.68) (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	3.72428 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	665.55657 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	9.27108 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.77259 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	172.1291 (mg/s)
	mass flux in river at SW-002	M_r2 =	349.9923 (mg/s)
	mass flux in river at SW-003	M_r3 =	464.7557 (mg/s)
	mass flux in river at SW-004	M_r4 =	590.6695 (mg/s)
	mass flux in river at SW-004A	M_r4A =	2,123.4892 (mg/s)
	mass flux in river at SW-005	M_r5 =	2,407.3263 (mg/s)
Convert mass flux to concentration	mass flux in river at USGS Gage	M_r6 =	2,411.0506 (mg/s)
	mass flux into Colby Lake	M_cl =	3,086.6508 (mg/s)
	High Flow		
	concentration in river at SW-001	C_r1 =	0.07126 (mg/L)
	concentration in river at SW-002	C_r2 =	0.07094 (mg/L)
	concentration in river at SW-003	C_r3 =	0.07082 (mg/L)
	concentration in river at SW-004	C_r4 =	0.07092 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.07446 (mg/L)
	concentration in river at SW-005	C_r5 =	0.07435 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.07452 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.08038 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1 - Mine Site - Reasonable

Case Parameter	Post-Closure Iron		
Input concentration data	concentration of surface water into SW-001	C_s1 =	1.6000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	1.6000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	1.6000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	1.6000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	1.6000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	1.6000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	1.6000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	1.6000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	1.6000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0300 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	0.1000 (mg/L)
	concentration of ground water into SW-001	C_g1 =	2.8440 (mg/L)
	concentration of ground water into SW-002	C_g2 =	2.8440 (mg/L)
	concentration of ground water into SW-003	C_g3 =	2.8440 (mg/L)
	concentration of ground water into SW-004	C_g4 =	2.8440 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	2.8440 (mg/L)
	concentration of ground water into SW-005	C_g5 =	2.8440 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	2.8440 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	2.8440 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.8468 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	0.1000 (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.8100 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.8100 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.8100 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.1500 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.8100 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.8100 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.8100 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.2255 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	2.8440 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	2.8440 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	2.8440 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M_s1 =	3,811.21760 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	14.48734 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.84900 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	4,016.98358 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	21.53506 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	2,601.12887 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	8.57503 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.26721 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00483 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00415 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	2,809.87155 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	25.11897 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.26721 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	0.11360 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00415 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	31,588.38452 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	111.52646 (mg/s)
	mass flux of West Pit overflow	M_sms =	40.18600 (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.52007 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00002 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.71047 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	6,076.56303 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	182.70140 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	(59.53544) (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	37.82804 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	15,212.72160 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	94.16768 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	17,65920 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	3,826.5539 (mg/s)
	mass flux in river at SW-002	M_r2 =	7,865.0726 (mg/s)
	mass flux in river at SW-003	M_r3 =	10,475.0527 (mg/s)
	mass flux in river at SW-004	M_r4 =	13,310.4281 (mg/s)
	mass flux in river at SW-004A	M_r4A =	45,051.7557 (mg/s)
	mass flux in river at SW-005	M_r5 =	51,311.0201 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	51,348.8482 (mg/s)
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C_r1 =	1.58423 (mg/L)
	concentration in river at SW-002	C_r2 =	1.59419 (mg/L)
	concentration in river at SW-003	C_r3 =	1.59616 (mg/L)
	concentration in river at SW-004	C_r4 =	1.59806 (mg/L)
	concentration in river at SW-004A	C_r4A =	1.57975 (mg/L)
	concentration in river at SW-005	C_r5 =	1.58463 (mg/L)
	concentration in river at USGS Gage	C_r6 =	1.58697 (mg/L)
	concentration in Colby Lake (H)	C_cl =	1.60503 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1 - Mine Site - Reasonable

Case Parameter	Post-Closure Hardness		
Input concentration data	concentration of surface water into SW-001	C_s1 =	110.0000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	110.0000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	110.0000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	110.0000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	110.0000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	110.0000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	110.0000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	110.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	110.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	110.0000 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	407.5144 (mg/L)
	concentration of ground water into SW-001	C_g1 =	66.4200 (mg/L)
	concentration of ground water into SW-002	C_g2 =	66.4200 (mg/L)
	concentration of ground water into SW-003	C_g3 =	66.4200 (mg/L)
	concentration of ground water into SW-004	C_g4 =	66.4200 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	66.4200 (mg/L)
	concentration of ground water into SW-005	C_g5 =	66.4200 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	66.4200 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	66.4200 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	371.0014 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	407.5144 (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	1,729.3495 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	1,729.3495 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	1,729.3495 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	71.5000 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	1,729.3495 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	1,729.3495 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	1,729.3495 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	43.5200 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	66.4200 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	66.4200 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	66.4200 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	262,021.21000 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	338.34348 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	3,113.00000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	276,167.62084 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	502.93907 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	178,827.60960 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	200.26497 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	117.06764 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	10.30529 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	8.85707 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00139 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	193,178.66935 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	586.63934 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	117.06764 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	462.92091 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	8.85707 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00133 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	##### (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	2,604.63688 (mg/s)
	mass flux of West Pit overflow	M_sms =	163,763.75077 (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	1,110.34999 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.03789 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	338.65554 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	417,763.70835 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	4,266.88722 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	(4,093.06174) (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	883.45242 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	##### (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	2,199.23262 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	1,214.07000 (mg/s)
Mass balance at each node	mass flux in river at SW-001	M_r1 =	265,472.5535 (mg/s)
	mass flux in river at SW-002	M_r2 =	542,143.1134 (mg/s)
	mass flux in river at SW-003	M_r3 =	721,307.2194 (mg/s)
	mass flux in river at SW-004	M_r4 =	915,661.3764 (mg/s)
	mass flux in river at SW-004A	M_r4A =	3,255,180.2432 (mg/s)
	mass flux in river at SW-005	M_r5 =	3,677,210.6387 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	3,678,094.2911 (mg/s)
	mass flux into Colby Lake	M_cl =	4,727,382.2038 (mg/s)
Convert mass flux to concentration	concentration in river at SW-001	C_r1 =	109.90809 (mg/L)
	concentration in river at SW-002	C_r2 =	109.88812 (mg/L)
	concentration in river at SW-003	C_r3 =	109.91115 (mg/L)
	concentration in river at SW-004	C_r4 =	109.93524 (mg/L)
	concentration in river at SW-004A	C_r4A =	114.14359 (mg/L)
	concentration in river at SW-005	C_r5 =	113.56292 (mg/L)
	concentration in river at USGS Gage	C_r6 =	113.67413 (mg/L)
	concentration in Colby Lake (H)	C_cl =	113.48139 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1 - Mine Site - Reasonable

Case Parameter	Post-Closure Potassium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	1.3000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	1.3000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	1.3000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	1.3000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	1.3000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	1.3000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	1.3000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	1.3000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	1.3000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	2.7000 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	22.0131 (mg/L)
	concentration of ground water into SW-001	C_g1 =	1.7500 (mg/L)
	concentration of ground water into SW-002	C_g2 =	1.7500 (mg/L)
	concentration of ground water into SW-003	C_g3 =	1.7500 (mg/L)
	concentration of ground water into SW-004	C_g4 =	1.7500 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	1.7500 (mg/L)
	concentration of ground water into SW-005	C_g5 =	1.7500 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	1.7500 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	1.7500 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	17.4511 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	22.0131 (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	49.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	49.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	49.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	4.4500 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	49.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	49.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	49.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	2.2600 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	1.7500 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	1.7500 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	1.7500 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	3.096.61430 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	8.91450 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	76.41000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	3.263.79916 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	13.25118 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	2.113.41720 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	5.27648 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	5.50682 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.29199 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.25096 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00004 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	2.283.02064 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	15.45647 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	5.50682 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	25.00601 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.25096 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00004 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	25.665.56242 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	68.62563 (mg/s)
	mass flux of West Pit overflow	M_sms =	8.846.17023 (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	31.46105 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00107 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	21.07716 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	4.937.20746 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	112.42175 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	(48.37255) (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	23.27675 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	12.360.33630 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	57.94425 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	14.34810 (mg/s)
Mass balance at each node	mass flux in river at SW-001	M_r1 =	3.181.9388 (mg/s)
	mass flux in river at SW-002	M_r2 =	6.458.9891 (mg/s)
	mass flux in river at SW-003	M_r3 =	8.583.7324 (mg/s)
	mass flux in river at SW-004	M_r4 =	10.912.9732 (mg/s)
	mass flux in river at SW-004A	M_r4A =	45.545.8708 (mg/s)
	mass flux in river at SW-005	M_r5 =	50.595.5000 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	50.618.7767 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	63.051.4054 (mg/s)
	concentration in river at SW-001	C_r1 =	1.31735 (mg/L)
	concentration in river at SW-002	C_r2 =	1.30919 (mg/L)
	concentration in river at SW-003	C_r3 =	1.30797 (mg/L)
	concentration in river at SW-004	C_r4 =	1.31022 (mg/L)
	concentration in river at SW-004A	C_r4A =	1.59708 (mg/L)
	concentration in river at SW-005	C_r5 =	1.56254 (mg/L)
	concentration in river at USGS Gage	C_r6 =	1.56441 (mg/L)
	concentration in Colby Lake (H)	C_cl =	1.63691 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1 - Mine Site - Reasonable

Case Parameter	Post-Closure Magnesium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	8.0000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	8.0000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	8.0000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	8.0000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	8.0000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	8.0000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	8.0000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	8.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	8.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	10.5000 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	25.6520 (mg/L)
	concentration of ground water into SW-001	C_g1 =	8.0200 (mg/L)
	concentration of ground water into SW-002	C_g2 =	8.0200 (mg/L)
	concentration of ground water into SW-003	C_g3 =	8.0200 (mg/L)
	concentration of ground water into SW-004	C_g4 =	8.0200 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	8.0200 (mg/L)
	concentration of ground water into SW-005	C_g5 =	8.0200 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	8.0200 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	8.0200 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	23.6751 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	25.6520 (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	93.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	93.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	93.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	9.0100 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	93.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	93.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	93.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	4.8800 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	8.0200 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	8.0200 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	8.0200 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M_s1 =	19,056.08800 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	40.85388 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	297.15000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	20,084.91788 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	60.72826 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	13,005.64433 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	24.18135 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	7.47055 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.55419 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.47631 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00007 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	14,049.35777 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	70.83480 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	7.47055 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	29.13967 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.47631 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00007 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	157,941.92259 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	314.50147 (mg/s)
	mass flux of West Pit overflow	M_sms =	10,308.50231 (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	59.71179 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00204 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	42.67533 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	30,382.81515 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	515.21282 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	(297.67722) (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	106.67402 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	76,063.60800 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	265.55022 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	88.29600 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	19,394.0919 (mg/s)
	mass flux in river at SW-002	M_r2 =	39,539.7380 (mg/s)
	mass flux in river at SW-003	M_r3 =	52,578.0648 (mg/s)
	mass flux in river at SW-004	M_r4 =	66,735.3441 (mg/s)
	mass flux in river at SW-004A	M_r4A =	235,402.6596 (mg/s)
	mass flux in river at SW-005	M_r5 =	266,300.6876 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	266,407.3616 (mg/s)
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C_r1 =	8.02933 (mg/L)
	concentration in river at SW-002	C_r2 =	8.01439 (mg/L)
	concentration in river at SW-003	C_r3 =	8.01173 (mg/L)
	concentration in river at SW-004	C_r4 =	8.01231 (mg/L)
	concentration in river at SW-004A	C_r4A =	8.25444 (mg/L)
	concentration in river at SW-005	C_r5 =	8.22414 (mg/L)
	concentration in river at USGS Gage	C_r6 =	8.23351 (mg/L)
	concentration in Colby Lake (H)	C_cl =	8.29043 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1 - Mine Site - Reasonable

Case Parameter	Post-Closure Manganese		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.1500 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.1500 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.1500 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.1500 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.1500 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.1500 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.1500 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.1500 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.1500 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0086 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	0.0100 (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.1240 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.1240 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.1240 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.1240 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.1240 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.1240 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.1240 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.1240 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.0795 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	0.0100 (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.3549 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.5169 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.6823 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.1160 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.3549 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.5169 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.6823 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.1604 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.1240 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.1240 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.1240 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M_s1 =	357.30165 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.63166 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.24338 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	376.59221 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.93894 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	243.85583 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.37388 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.02508 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00308 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00349 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	263.42546 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	1.09520 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.02508 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	0.01136 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00349 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	2,961.41105 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	4.86262 (mg/s)
	mass flux of West Pit overflow	M_sms =	4.01860 (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.22787 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00001 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.54943 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	569.67778 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	7.96588 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	(5.58145) (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	1.64932 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	1,426.19265 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	4.10576 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	1.65555 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	358.1767 (mg/s)
	mass flux in river at SW-002	M_r2 =	735.7078 (mg/s)
	mass flux in river at SW-003	M_r3 =	979.9652 (mg/s)
	mass flux in river at SW-004	M_r4 =	1,244.5288 (mg/s)
	mass flux in river at SW-004A	M_r4A =	4,215.5994 (mg/s)
	mass flux in river at SW-005	M_r5 =	4,793.2430 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	4,794.8924 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	6,226.8463 (mg/s)
	High Flow		
	concentration in river at SW-001	C_r1 =	0.14829 (mg/L)
	concentration in river at SW-002	C_r2 =	0.14912 (mg/L)
	concentration in river at SW-003	C_r3 =	0.14933 (mg/L)
	concentration in river at SW-004	C_r4 =	0.14942 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.14782 (mg/L)
	concentration in river at SW-005	C_r5 =	0.14803 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.14819 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.14663 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1 - Mine Site - Reasonable

Case Parameter	Post-Closure Sodium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	2.5000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	2.5000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	2.5000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	2.5000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	2.5000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	2.5000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	2.5000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	2.5000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	2.5000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	4.8000 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	310.4202 (mg/L)
	concentration of ground water into SW-001	C_g1 =	13.3300 (mg/L)
	concentration of ground water into SW-002	C_g2 =	13.3300 (mg/L)
	concentration of ground water into SW-003	C_g3 =	13.3300 (mg/L)
	concentration of ground water into SW-004	C_g4 =	13.3300 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	13.3300 (mg/L)
	concentration of ground water into SW-005	C_g5 =	13.3300 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	13.3300 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	13.3300 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	624.5527 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	310.4202 (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	242.4332 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	353.1070 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	466.0941 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	7.1900 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	242.4332 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	353.1070 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	466.0941 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	4.6000 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	13.3300 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	13.3300 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	13.3300 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	5,955.02750 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	67.90302 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	135.84000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	6,276.53684 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	100.93613 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	4,064.26385 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	40.19169 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	197.07448 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	2.10418 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	2.38716 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00028 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	4,390.42430 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	117.73415 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	197.07448 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gwp =	352.62553 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	2.38716 (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00036 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	49,356.85081 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	522.73125 (mg/s)
	mass flux of West Pit overflow	M_sms =	124,745.45506 (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	155.65718 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00531 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	34.05501 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	9,494.62974 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	856.33253 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	(93.02413) (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	177.30233 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	23,769.87750 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	441.36963 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	27.59250 (mg/s)
Mass balance at each node	mass flux in river at SW-001	M_r1 =	6,158.7705 (mg/s)
	mass flux in river at SW-002	M_r2 =	12,536.2435 (mg/s)
	mass flux in river at SW-003	M_r3 =	16,842.2651 (mg/s)
	mass flux in river at SW-004	M_r4 =	21,902.5114 (mg/s)
	mass flux in river at SW-004A	M_r4A =	196,717.2660 (mg/s)
	mass flux in river at SW-005	M_r5 =	207,068.2283 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	207,245.5306 (mg/s)
	mass flux into Colby Lake	M_cl =	231,484.3703 (mg/s)
Convert mass flux to concentration	concentration in river at SW-001	C_r1 =	2.54979 (mg/L)
	concentration in river at SW-002	C_r2 =	2.54100 (mg/L)
	concentration in river at SW-003	C_r3 =	2.56639 (mg/L)
	concentration in river at SW-004	C_r4 =	2.62964 (mg/L)
	concentration in river at SW-004A	C_r4A =	6.89793 (mg/L)
	concentration in river at SW-005	C_r5 =	6.39487 (mg/L)
	concentration in river at USGS Gage	C_r6 =	6.40507 (mg/L)
	concentration in Colby Lake (H)	C_cl =	7.50843 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1 - Mine Site - Reasonable

Case Parameter	Post-Closure Nickel		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0016 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0016 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0016 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0016 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0016 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0016 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0016 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0016 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0033 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0016 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	0.0520 (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0163 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0163 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0163 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0163 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0163 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0163 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0163 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0163 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.0004 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	0.0520 (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.1531 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.2229 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.2943 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.0190 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.1531 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.2229 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.2943 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0080 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0163 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0163 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0163 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	3.71594 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.08293 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.04387 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	3.91656 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.12327 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	2.53610 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.04909 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.00013 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00133 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00151 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	2.73962 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.14379 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.00013 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	0.05903 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00151 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	30.79867 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.63841 (mg/s)
	mass flux of West Pit overflow	M_sms =	20.88157 (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.09828 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.08999 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	5.92465 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	1.04584 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	(0.05805) (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.21654 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	14.83240 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.53905 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.03642 (mg/s)
Mass balance at each node	mass flux in river at SW-001	M_r1 =	3.8427 (mg/s)
	mass flux in river at SW-002	M_r2 =	7.8826 (mg/s)
	mass flux in river at SW-003	M_r3 =	10.4707 (mg/s)
	mass flux in river at SW-004	M_r4 =	13.4148 (mg/s)
	mass flux in river at SW-004A	M_r4A =	65.9217 (mg/s)
	mass flux in river at SW-005	M_r5 =	72.5922 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	73.1068 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	88.5166 (mg/s)
	concentration in river at SW-001	C_r1 =	0.00159 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00160 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00160 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00161 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00231 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00225 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00226 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.00275 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1 - Mine Site - Reasonable

Case Parameter	Post-Closure Lead		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0005 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0005 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0005 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0005 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0005 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0005 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0005 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0005 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0005 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0002 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	0.0066 (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0011 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0011 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0011 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0011 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0011 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0011 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0011 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0011 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.0076 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	0.0066 (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0183 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0267 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0352 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0183 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0267 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0352 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0007 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0011 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0011 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0011 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M_s1 =	1.19101 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00571 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.00425 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	1.25531 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.00848 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.81285 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00338 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.00240 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00016 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00018 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.87808 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.00989 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.00240 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	0.00748 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00018 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	9.87137 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.04392 (mg/s)
	mass flux of West Pit overflow	M_sms =	2.64503 (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.01177 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	1.89893 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.07195 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	(0.01860) (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.01490 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	4.75398 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.03708 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00552 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	1.2010 (mg/s)
	mass flux in river at SW-002	M_r2 =	2.4647 (mg/s)
	mass flux in river at SW-003	M_r3 =	3.2837 (mg/s)
	mass flux in river at SW-004	M_r4 =	4.1817 (mg/s)
	mass flux in river at SW-004A	M_r4A =	16.7538 (mg/s)
	mass flux in river at SW-005	M_r5 =	18.7247 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	18.7396 (mg/s)
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C_r1 =	0.00050 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00050 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00050 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00050 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00059 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00058 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00058 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.00061 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1 - Mine Site - Reasonable

Case Parameter	Post-Closure Antimony		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0015 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0015 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0015 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0015 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0015 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0015 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0015 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0015 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0015 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0015 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	0.0919 (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0015 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0015 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0015 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0015 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0015 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0015 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0015 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0015 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.0079 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	0.0919 (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0800 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0800 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0800 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.0004 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0800 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0800 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0800 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0003 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0015 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0015 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0015 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	3.57302 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00764 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.04245 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	3.76592 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.01136 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	2.43856 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00452 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.00248 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00048 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00041 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	2.63425 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.01325 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.00248 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	0.10444 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00041 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	29.61411 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.05882 (mg/s)
	mass flux of West Pit overflow	M_sms =	36.94658 (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.05136 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.00189 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	5.69678 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.09636 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	0.05581 (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.01995 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	14.26193 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.04967 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.01656 (mg/s)
Mass balance at each node	mass flux in river at SW-001	M_r1 =	3.6231 (mg/s)
	mass flux in river at SW-002	M_r2 =	7.4004 (mg/s)
	mass flux in river at SW-003	M_r3 =	9.8468 (mg/s)
	mass flux in river at SW-004	M_r4 =	12.6017 (mg/s)
	mass flux in river at SW-004A	M_r4A =	79.2744 (mg/s)
	mass flux in river at SW-005	M_r5 =	85.0676 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	85.0875 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	99.4157 (mg/s)
	concentration in river at SW-001	C_r1 =	0.00150 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00150 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00150 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00151 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00278 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00263 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00263 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.00286 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1 - Mine Site - Reasonable

Case Parameter	Post-Closure Selenium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0005 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0005 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0005 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0005 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0005 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0005 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0005 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0005 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0005 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0005 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	0.0100 (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0019 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0019 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0019 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0019 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0019 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0019 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0019 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0019 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.0196 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	0.0100 (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0029 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0029 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0029 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.0019 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0029 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0029 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0029 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0004 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0019 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0019 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0019 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M_s1 =	1.19101 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00973 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.01415 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	1.25531 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.01446 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.81285 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00576 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.00619 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00002 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.87808 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.01687 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.00619 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	0.01132 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	9.87137 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.07490 (mg/s)
	mass flux of West Pit overflow	M_sms =	4.00553 (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.00186 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.00900 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	1.89893 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.12270 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	(0.01860) (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.02540 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	4.75398 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.06324 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00552 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	1.2149 (mg/s)
	mass flux in river at SW-002	M_r2 =	2.4847 (mg/s)
	mass flux in river at SW-003	M_r3 =	3.3095 (mg/s)
	mass flux in river at SW-004	M_r4 =	4.2220 (mg/s)
	mass flux in river at SW-004A	M_r4A =	18.1846 (mg/s)
	mass flux in river at SW-005	M_r5 =	20.2063 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	20.2317 (mg/s)
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C_r1 =	0.00050 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00050 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00050 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00051 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00064 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00062 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00063 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.00068 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1 - Mine Site - Reasonable

Case Parameter	Post-Closure Sulfate		
Input concentration data	concentration of surface water into SW-001	C_s1 =	9.0000 (mg/L)
	concentration of surface water into SW-002	C_s2 =	9.0000 (mg/L)
	concentration of surface water into SW-003	C_s3 =	9.0000 (mg/L)
	concentration of surface water into SW-004	C_s4 =	9.0000 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	9.0000 (mg/L)
	concentration of surface water into SW-005	C_s5 =	9.0000 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	9.0000 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	9.0000 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	9.0000 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	22.0000 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	233.1771 (mg/L)
	concentration of ground water into SW-001	C_g1 =	16.1300 (mg/L)
	concentration of ground water into SW-002	C_g2 =	16.1300 (mg/L)
	concentration of ground water into SW-003	C_g3 =	16.1300 (mg/L)
	concentration of ground water into SW-004	C_g4 =	16.1300 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	16.1300 (mg/L)
	concentration of ground water into SW-005	C_g5 =	16.1300 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	16.1300 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	16.1300 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	192.5903 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	233.1771 (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	592.8026 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	863.4244 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	1,139.7029 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	68.3000 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	592.8026 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	863.4244 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	1,139.7029 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	35.1700 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	16.1300 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	16.1300 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	16.1300 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	21,438.09900 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	82.16622 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	622.60000 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	22,595.53261 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	122.13802 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	14,631.34988 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	48.63406 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	60.77090 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	5.14519 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	5.83713 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00070 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	15,805.52749 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	142.46451 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	60.77090 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	264.88028 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	5.83713 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00088 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	177,684.66292 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	632.53226 (mg/s)
	mass flux of West Pit overflow	M_sms =	93,704.53349 (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	380.61616 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.01299 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	323.49893 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	34,180.66705 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	1,036.20733 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	(334.88687) (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	214.54513 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	85,571.55900 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	534.08043 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	99.33300 (mg/s)
Mass balance at each node	mass flux in river at SW-001	M_r1 =	22,142.8652 (mg/s)
	mass flux in river at SW-002	M_r2 =	44,860.5359 (mg/s)
	mass flux in river at SW-003	M_r3 =	59,612.2737 (mg/s)
	mass flux in river at SW-004	M_r4 =	75,891.7556 (mg/s)
	mass flux in river at SW-004A	M_r4A =	348,617.6123 (mg/s)
	mass flux in river at SW-005	M_r5 =	383,834.4867 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	384,049.0318 (mg/s)
Convert mass flux to concentration	mass flux into Colby Lake	M_cl =	470,254.0043 (mg/s)
	concentration in river at SW-001	C_r1 =	9.16735 (mg/L)
	concentration in river at SW-002	C_r2 =	9.09288 (mg/L)
	concentration in river at SW-003	C_r3 =	9.08358 (mg/L)
	concentration in river at SW-004	C_r4 =	9.11164 (mg/L)
	concentration in river at SW-004A	C_r4A =	12.22435 (mg/L)
	concentration in river at SW-005	C_r5 =	11.85392 (mg/L)
	concentration in river at USGS Gage	C_r6 =	11.86931 (mg/L)
	concentration in Colby Lake (H	C_cl =	12.71400 (mg/L)

Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1 - Mine Site - Reasonable

Case Parameter	Post-Closure Thallium		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0004 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0004 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0004 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0004 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0004 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0004 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0004 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0004 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0004 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0003 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	0.0002 (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0000 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0000 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0000 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0000 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0000 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0000 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0000 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0000 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.0002 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	0.0002 (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0000 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0000 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	- (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0000 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0000 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0000 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0000 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0000 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0000 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0000 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	mass flux of surface water into SW-001	M_s1 =	0.95280 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.00002 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.00809 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	1.00425 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.00003 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	0.65028 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.00001 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.00007 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	0.70247 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.00004 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.00007 (mg/s)
	mass flux of seepage from West Pit	M_gwp =	0.00020 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	7.89710 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	0.00016 (mg/s)
	mass flux of West Pit overflow	M_sms =	0.07050 (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.00001 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	- (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	1.51914 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	0.00026 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	(0.01488) (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.00005 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	3.80318 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.00013 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.00441 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	0.9609 (mg/s)
	mass flux in river at SW-002	M_r2 =	1.9652 (mg/s)
	mass flux in river at SW-003	M_r3 =	2.6156 (mg/s)
	mass flux in river at SW-004	M_r4 =	3.3183 (mg/s)
	mass flux in river at SW-004A	M_r4A =	11.2861 (mg/s)
	mass flux in river at SW-005	M_r5 =	12.8055 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	12.8055 (mg/s)
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C_r1 =	0.00040 (mg/L)
	concentration in river at SW-002	C_r2 =	0.00040 (mg/L)
	concentration in river at SW-003	C_r3 =	0.00040 (mg/L)
	concentration in river at SW-004	C_r4 =	0.00040 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.00040 (mg/L)
	concentration in river at SW-005	C_r5 =	0.00040 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.00040 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.00039 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1 - Mine Site - Reason

Case	Post-Closure		
Parameter	Vanadium		
Input concentration data	concentration of surface water into SW-001	C s1 =	0.0009 (mg/L)
	concentration of surface water into SW-002	C s2 =	0.0009 (mg/L)
	concentration of surface water into SW-003	C s3 =	0.0009 (mg/L)
	concentration of surface water into SW-004	C s4 =	0.0009 (mg/L)
	concentration of surface water into SW-004A	C s4A =	0.0009 (mg/L)
	concentration of surface water into SW-005	C s5 =	0.0009 (mg/L)
	concentration of surface water into USGS Gage	C s6 =	0.0009 (mg/L)
	concentration of surface water into Colby Lake	C scl =	0.0009 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C shl =	0.0009 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C sns =	0.0043 (mg/L)
	concentration of surface water flow from West Pit overflow	C sms =	0.0748 (mg/L)
	concentration of ground water into SW-001	C g1 =	0.0043 (mg/L)
	concentration of ground water into SW-002	C g2 =	0.0043 (mg/L)
	concentration of ground water into SW-003	C g3 =	0.0043 (mg/L)
	concentration of ground water into SW-004	C g4 =	0.0043 (mg/L)
	concentration of ground water into SW-004A	C g4A =	0.0043 (mg/L)
	concentration of ground water into SW-005	C g5 =	0.0043 (mg/L)
	concentration of ground water into USGS Gage	C g6 =	0.0043 (mg/L)
	concentration of ground water into Colby Lake	C gcl =	0.0043 (mg/L)
	concentration of ground water seepage from East Pit	C gwp =	0.0318 (mg/L)
	concentration of ground water seepage from West Pit	C gwp =	0.0748 (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C gC12 =	0.0914 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C gC3 =	0.1331 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C gC3LO =	0.1757 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C gO12 =	0.0014 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C gC12s =	0.0914 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C gC3s =	0.1331 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C gC3LOs =	0.1757 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C gOp1 =	0.0017 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C gHRp2 =	0.0043 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C gHRp4 =	0.0043 (mg/L)
	concentration of leakage from RTH Pond - PW3	C gRTHp =	0.0043 (mg/L)
	concentration of liner leakage from WWTF pond	C gWTFp =	#N/A (mg/L)

			High Flow
Convert concentration to mass flux	mass flux of surface water into SW-001	M s1 =	2.14381 (mg/s)
	mass flux of ground water into SW-001	M g1 =	0.02190 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M sns =	0.12169 (mg/s)
	mass flux of surface water into SW-002	M s2 =	2.25955 (mg/s)
	mass flux of ground water into SW-002	M g2 =	0.03256 (mg/s)
	mass flux of surface water into SW-003	M s3 =	1.46313 (mg/s)
	mass flux of ground water into SW-003	M g3 =	0.01297 (mg/s)
	mass flux of seepage from East Pit to SW-003	M gcp 003 =	0.01003 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M gC3 003 =	0.00079 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M gC3LO 003 =	0.00090 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M gC3s 003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M s4 =	1.58055 (mg/s)
	mass flux of ground water into SW-004	M g4 =	0.03798 (mg/s)
	mass flux of seepage from East Pit to SW-004	M gcp 004 =	0.01003 (mg/s)
	mass flux of seepage from West Pit	M gwp =	0.08501 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M gC3 004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M gC3LO 004 =	0.00090 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M gC3LOs 004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M s4A =	17.76847 (mg/s)
	mass flux of ground water into SW-004A	M g4A =	0.16862 (mg/s)
	mass flux of West Pit overflow	M sms =	30.07378 (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M gC12 =	0.05867 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M gO12 =	0.00663 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M s5 =	3.41807 (mg/s)
	mass flux of ground water into SW-005	M g5 =	0.27624 (mg/s)
	mass flux of surface water into USGS Gage	M s6 =	(0.03349) (mg/s)
	mass flux of ground water into USGS Gage	M g6 =	0.05719 (mg/s)
	mass flux of surface water into Colby Lake	M scl =	8.55716 (mg/s)
	mass flux of ground water into Colby Lake	M gcl =	0.14238 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M shl =	0.00993 (mg/s)
			High Flow
Mass balance at each node	mass flux in river at SW-001	M r1 =	2.2874 (mg/s)
	mass flux in river at SW-002	M r2 =	4.5795 (mg/s)
	mass flux in river at SW-003	M r3 =	6.0673 (mg/s)
	mass flux in river at SW-004	M r4 =	7.7818 (mg/s)
	mass flux in river at SW-004A	M r4A =	55.8580 (mg/s)
	mass flux in river at SW-005	M r5 =	59.5523 (mg/s)
	mass flux in river at USGS Gage	M r6 =	59.6095 (mg/s)
	mass flux into Colby Lake	M cl =	68.3190 (mg/s)
			High Flow
Convert mass flux to concentration	concentration in river at SW-001	C r1 =	0.00095 (mg/L)
	concentration in river at SW-002	C r2 =	0.00093 (mg/L)
	concentration in river at SW-003	C r3 =	0.00092 (mg/L)
	concentration in river at SW-004	C r4 =	0.00093 (mg/L)
	concentration in river at SW-004A	C r4A =	0.00196 (mg/L)
	concentration in river at SW-005	C r5 =	0.00184 (mg/L)
	concentration in river at USGS Gage	C r6 =	0.00184 (mg/L)
	concentration in Colby Lake (H	C cl =	0.00213 (mg/L)



Partridge River Mass-Balance Model - Mine Site - Reasonable Alternative 1 - Mine Site - Reasonable

Case Parameter	Post-Closure Zinc		
Input concentration data	concentration of surface water into SW-001	C_s1 =	0.0160 (mg/L)
	concentration of surface water into SW-002	C_s2 =	0.0160 (mg/L)
	concentration of surface water into SW-003	C_s3 =	0.0160 (mg/L)
	concentration of surface water into SW-004	C_s4 =	0.0160 (mg/L)
	concentration of surface water into SW-004A	C_s4A =	0.0160 (mg/L)
	concentration of surface water into SW-005	C_s5 =	0.0160 (mg/L)
	concentration of surface water into USGS Gage	C_s6 =	0.0160 (mg/L)
	concentration of surface water into Colby Lake	C_scl =	0.0160 (mg/L)
	concentration of surface water inflow from Hoyt Lakes WWTP	C_shl =	0.0620 (mg/L)
	concentration of surface water discharges from upstream of PM-1	C_sns =	0.0073 (mg/L)
	concentration of surface water flow from West Pit overflow	C_sms =	0.0516 (mg/L)
	concentration of ground water into SW-001	C_g1 =	0.0275 (mg/L)
	concentration of ground water into SW-002	C_g2 =	0.0275 (mg/L)
	concentration of ground water into SW-003	C_g3 =	0.0275 (mg/L)
	concentration of ground water into SW-004	C_g4 =	0.0275 (mg/L)
	concentration of ground water into SW-004A	C_g4A =	0.0275 (mg/L)
	concentration of ground water into SW-005	C_g5 =	0.0275 (mg/L)
	concentration of ground water into USGS Gage	C_g6 =	0.0275 (mg/L)
	concentration of ground water into Colby Lake	C_gcl =	0.0275 (mg/L)
	concentration of ground water seepage from East Pit	C_gep =	0.0241 (mg/L)
	concentration of ground water seepage from West Pit	C_gwp =	0.0516 (mg/L)
	concentration of liner leakage from Cat 1 stockpile	C_gC12 =	0.0900 (mg/L)
	concentration of liner leakage from Cat 2/3 stockpile	C_gC3 =	0.0900 (mg/L)
	concentration of liner leakage from Cat 3LO stockpile	C_gC3LO =	0.0900 (mg/L)
	concentration of liner leakage from Cat 4 stockpile	C_gC4 =	#N/A (mg/L)
	concentration of liner leakage from LOSP	C_gC4LO =	#N/A (mg/L)
	concentration of seepage from Overburden (Storage)	C_gOS =	#N/A (mg/L)
	concentration of seepage from Overburden (Cat 1)	C_gO12 =	0.0030 (mg/L)
	concentration of liner leakage from Cat 1 sumps	C_gC12s =	0.0900 (mg/L)
	concentration of liner leakage from Cat 2/3 sumps	C_gC3s =	0.0900 (mg/L)
	concentration of liner leakage from Cat 3LO sumps	C_gC3LOs =	0.0900 (mg/L)
	concentration of liner leakage from Cat 4 sumps	C_gC4s =	#N/A (mg/L)
	concentration of liner leakage from LOSP sumps	C_gC4LOs =	#N/A (mg/L)
	concentration of seepage from Overburden Ponds - PW1	C_gOp1 =	0.0046 (mg/L)
	concentration of seepage from Overburden Pond - PW7	C_gOp7 =	#N/A (mg/L)
	concentration of leakage from Haul Road Pond - PW2	C_gHRp2 =	0.0275 (mg/L)
	concentration of leakage from Haul Road Pond - PW4	C_gHRp4 =	0.0275 (mg/L)
	concentration of leakage from RTH Pond - PW3	C_gRTHp =	0.0275 (mg/L)
	concentration of liner leakage from WWTF pond	C_gWTFp =	#N/A (mg/L)
Convert concentration to mass flux	High Flow		
	mass flux of surface water into SW-001	M_s1 =	38.11218 (mg/s)
	mass flux of ground water into SW-001	M_g1 =	0.14009 (mg/s)
	mass flux of surface discharges from upstream of PM-1	M_sns =	0.20744 (mg/s)
	mass flux of surface water into SW-002	M_s2 =	40.16984 (mg/s)
	mass flux of ground water into SW-002	M_g2 =	0.20823 (mg/s)
	mass flux of surface water into SW-003	M_s3 =	26.01129 (mg/s)
	mass flux of ground water into SW-003	M_g3 =	0.08292 (mg/s)
	mass flux of seepage from East Pit to SW-003	M_gep_003 =	0.00760 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-003	M_gC3_003 =	0.00054 (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-003	M_gC3LO_003 =	0.00046 (mg/s)
	mass flux of liner leakage from Cat 2/3 sumps to SW-003	M_gC3s_003 =	0.00000 (mg/s)
	mass flux of surface water into SW-004	M_s4 =	28.09872 (mg/s)
	mass flux of ground water into SW-004	M_g4 =	0.24289 (mg/s)
	mass flux of seepage from East Pit to SW-004	M_gep_004 =	0.00760 (mg/s)
	mass flux of liner leakage from West Pit	M_gwp =	0.05861 (mg/s)
	mass flux of liner leakage from Cat 2/3 stockpile to SW-004	M_gC3_004 =	- (mg/s)
	mass flux of liner leakage from Cat 3LO stockpile to SW-004	M_gC3LO_004 =	0.00046 (mg/s)
	mass flux of liner leakage from Cat 4 stockpile	M_gC4 =	#N/A (mg/s)
	mass flux of liner leakage from LOSP	M_gC4LO =	#N/A (mg/s)
	mass flux of seepage from Overburden (Storage)	M_gOS =	#N/A (mg/s)
	mass flux of liner leakage from Cat 3LO sumps to SW-004	M_gC3LOs_004 =	0.00000 (mg/s)
	mass flux of liner leakage from Cat 4 sumps	M_gC4s =	#N/A (mg/s)
	mass flux of liner leakage from LOSP sumps	M_gC4LOs =	#N/A (mg/s)
	mass flux of seepage from Overburden Ponds - PW1	M_gOp1 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW2	M_gHRp2 =	- (mg/s)
	mass flux of leakage from Haul Road Pond - PW4	M_gHRp4 =	- (mg/s)
	mass flux of leakage from RTH Pond - PW3	M_gRTHp =	- (mg/s)
	mass flux of liner leakage from WWTF pond	M_gWTFp =	#N/A (mg/s)
	mass flux of surface water into SW-004A	M_s4A =	315.88385 (mg/s)
	mass flux of ground water into SW-004A	M_g4A =	1.07840 (mg/s)
	mass flux of West Pit overflow	M_sms =	20.73495 (mg/s)
	mass flux of liner leakage from Cat 1 stockpile	M_gC12 =	0.05779 (mg/s)
	mass flux of liner leakage from Cat 1 sumps	M_gC12s =	0.00000 (mg/s)
	mass flux of seepage from Overburden (Cat 1)	M_gO12 =	0.01421 (mg/s)
	mass flux of seepage from Overburden Pond - PW7	M_gOp7 =	#N/A (mg/s)
	mass flux of surface water into SW-005	M_s5 =	60.76563 (mg/s)
	mass flux of ground water into SW-005	M_g5 =	1.76663 (mg/s)
	mass flux of surface water into USGS Gage	M_s6 =	(0.59535) (mg/s)
	mass flux of ground water into USGS Gage	M_g6 =	0.36578 (mg/s)
	mass flux of surface water into Colby Lake	M_scl =	152.12722 (mg/s)
	mass flux of ground water into Colby Lake	M_gcl =	0.91055 (mg/s)
	mass flux of surface water from Hoyt Lakes WWTP	M_shl =	0.68429 (mg/s)
Mass balance at each node	High Flow		
	mass flux in river at SW-001	M_r1 =	38.4597 (mg/s)
	mass flux in river at SW-002	M_r2 =	78.8378 (mg/s)
	mass flux in river at SW-003	M_r3 =	104.9406 (mg/s)
	mass flux in river at SW-004	M_r4 =	133.3489 (mg/s)
	mass flux in river at SW-004A	M_r4A =	471.1181 (mg/s)
	mass flux in river at SW-005	M_r5 =	533.6503 (mg/s)
	mass flux in river at USGS Gage	M_r6 =	534.0161 (mg/s)
Convert mass flux to concentration	High Flow		
	concentration in river at SW-001	C_r1 =	0.01592 (mg/L)
	concentration in river at SW-002	C_r2 =	0.01598 (mg/L)
	concentration in river at SW-003	C_r3 =	0.01599 (mg/L)
	concentration in river at SW-004	C_r4 =	0.01601 (mg/L)
	concentration in river at SW-004A	C_r4A =	0.01652 (mg/L)
	concentration in river at SW-005	C_r5 =	0.01648 (mg/L)
	concentration in river at USGS Gage	C_r6 =	0.01650 (mg/L)
	concentration in Colby Lake (H)	C_cl =	0.01690 (mg/L)